THE
PEDAGOGICAL SEMINARY.
Founded and Edited by G. STANLEY HALL.
VOL. XII. JUNE, 1905. No. 2.

A STUDY OF CHILDREN'S INTEREST IN FLOWERS.[1]

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SECTION A.

This part of the study is based upon 433 returns from children ranging in age from eight to twelve years,—219 are from girls, 214 from boys. 300 of the returns are from children living in a very small city. 133 are from those living in a large city.

Flowers Known by Children. 177 different flowers were mentioned as known by the children; the average number of flowers known by a child according to these returns, is 15; with children, eight years old, the average is 14, nine years, 17, up to twelve years where the average is 21. The flowers mentioned in the largest number of papers were the rose, violet and pansy. More flowers are mentioned by the girls than by the boys,

This study was made with aid from the Carnegie Institution.

[1]This study is based upon material collected in answer to a syllabus issued in November, 1902. The questionnaire is in two parts: the first part comprising a set of questions to be answered directly by the children themselves; the second part intended to bring out replies more of a reminiscent nature from youth and adults.

Acknowledgments for data are due Miss Lillie A. Williams, State Normal School, Trenton, N. J.; L. W. Kline, State Normal School, Duluth, Minn.; W. S. Monroe, State Normal School, Westfield, Mass.; Normal Schools of Emporia, Kan., Mankato, Minn., Greeley, Col., Fitchburg, Mass.; Miss Calkins, Wellesley College; T. H. Hadley, Superintendent Public Schools, Sharon, Pa.; J. E. Lynch, Principal in Public Schools, Worcester, Mass.; J. C. Wagner, Principal Public Schools, Newport, Pa.; Miss McCorkle, Public Schools, Philadelphia, Pa.

The writer wishes especially to express grateful thanks to President Hall and Dr. Theodate L. Smith for their kindness and helpful suggestions.

also a larger number by the children of the large city than by the others. The children who especially stated that they had lived in the country seemed not to know any more flowers, either wild or cultivated, than the others, and in almost all cases, not as many as those who stated that they had never lived in the country. In very many cases, the fact was not stated whether the writer had ever lived in the country or not, but the difference in the size of the localities from which the returns come may perhaps suggest some comparison in this respect. The cultivated flowers are mentioned in much larger numbers than the wild flowers, and as the number of flowers known and mentioned along up the ages increases, this increase seems to be, in the whole number of returns, in the cultivated flowers, but in the 133 papers, this gain is also in the wild flowers. With the children living in the large city, the average number of wild and cultivated flowers known is nearly the same, while with the other children the proportion of wild and cultivated is about half. The fact that the the children who have lived always in a large city know more of the wild flowers, immediately suggests an effect of the growing interest in nature study and the part it plays in the school work in stimulating in the child a closer acquaintance and wider knowledge of the flowers in the community. Special likes and dislikes are indicated in the majority of the returns, most having one favorite flower and about three-fifths of the total number answering, mentioning flowers disliked.

The favorite flowers, according to frequency of mention, are largely the cultivated ones,—rose, carnation, lily, lily of the valley, and violet. In some cases one reason is given for the flowers being the favorite, and in some, several reasons, the numbers following referring to any one reason expressed or among several. The reasons given for the likes are most commonly (1) fragrance (64% giving this as a reason for the special preference); (2) beauty, because the flower is pretty, (31%); color is specified particularly in 15% of the cases, blue, white, and the many colored flowers like the pansy, sweet-pea and tulip being the special favorites where color is concerned. There was no instance of a yellow flower being mentioned as a favorite on account of its color, and there were but very few cases where yellow flowers were given as the favorites for any reason, while it is very noticeable in the dislikes that it is largely yellow flowers that are specified. (3) Miscellaneous reasons, on account of the shape, size, certain qualities possessed by the flowers, the lasting nature of certain flowers giving them the special preference with several, from certain attributes which the flowers embody, with a few, and through certain associations. Thirty-five different flowers are mentioned for the vari-

ous reasons, showing the wide range of individual preferences. Of the concrete preferences under this latter heading were the following :

Several times mentioned for the shape or form, were the lily, lily of the valley, because it looks so much like a bell (F., 8); because it is so graceful (F., 12); the sweet pea, because it is shaped so oddly (F., 9); one's favorites are the pansies, because they have such soft, velvety petals (F., 11); calla, because it looks so rare and like wax (F., 12); carnation, because it stays in bloom pretty long and because it was McKinley's favorite flower (M., 11); the purity of the lily and the calla is several times mentioned; also the violet because it is so innocent (M., 12); so neat (F., 10); pansy, because it is so dainty (F., 9).

The flowers disliked are largely the wild flowers : dandelion, daisy, buttercup, sunflower, goldenrod (noticeably yellow flowers), being most frequently mentioned. Sixty different flowers are mentioned among the returns as individually disliked, wild and cultivated flowers being mentioned in the same proportion. The reasons for the dislikes are practically co-ordinate with those for the favorite flowers; (1) odor of the flower, (47% specified this reason); lack of odor is also given as a reason for disliking the flower in some cases (10%); (2) lack of beauty because the flowers are not pretty (11%); the color of the flower is specified particularly in 8% of the cases, yellow and red being the colors especially disliked; (3) miscellaneous reasons, shape, size, disagreeable qualities of the flower, perishable nature, etc. As showing the many individual dislikes, the following are typical:

Bleeding hearts, because they have no smell and are not pretty (M., 10); the red rose, on account of its color (M., 9); pink, buttercup and daisy, because they don't smell good and are not a good color (M., 10); hyacinths, because they are not pretty and have a sickening odor (F., 12); tulip and daisy, because they are not a pretty shape and don't smell nice (M., 11); dandelion, because it stains your hands (F., 9); daisy and buttercup, because they are so common (M., 12).

Certain noticeable differences between the girls and boys are brought out in the reasons given for both the likes and dislikes. In both *fragrance* leads as the reason with the girls over the boys in a larger proportion by 10%, the number of returns from boys being slightly larger in each case, also ; this fact seeming to suggest that there is perhaps greater sensitiveness to odors with girls than with boys. In the dislikes, the second reason, as the first is less intense, leads with the boys over the girls. In the likes, the shape or form of the flower, and the qualities that the flowers seem to possess, because it is "delicate," "pure," "neat," etc., lead as reasons with the girls over the boys, while the older children, as we should expect, mention these reasons particularly more than those younger.

More than four-fifths of the children answering the syllabus

ascribe feelings in one way or another to the flowers. In many cases it is taken for granted that in a general way, flowers are like people in possessing a sentient life, some of the individual expressions being that "they have as much feeling as we do" (M., 9); "feelings as well as people" (M., 10); "just like anyone else" (F., 9); "just the same as a person, and if a flower could talk it would tell us many a sad thing" (F., 9); "they are like people because they have feelings" (F., 8); with some, and these mostly among the older children, the belief is somewhat modified, the expressions of it being that 'flowers have some kind of feeling,' or 'feelings in one way,' 'to a certain extent', or 'some do.' In some cases, the original *feeling* upon which the belief might rest, seems to exist, but it cannot be quite accepted as such; one says "I like to think they do, anyway" (F., 12); "I hate to see them harmed or destroyed, because it makes me feel as if they had feelings and were suffering" (M., 11). The feelings ascribed to them, in many cases, seem to be largely physical; the fact that they live and grow and die, and their responsiveness to various conditions indicating that they possess sensations. Their wilting and dying when they are handled, picked or ill-treated are commonly taken as signs that they must feel; also their need of water, their withering for want of moisture, their turning toward the light. More definite physical feelings are given them in the children's saying that under various conditions the flowers feel good, nice, healthy, fresh, like living, warm and cozy; and in the feelings of discomfort which they attribute to them, cold, frozen, feel like dying, feel dead, bad, miserable, sleepy, 'they go to sleep when they wither,' drowsy, tired, sick, thirsty, hungry.

The strength of this idea that the plant or flower must suffer pain or discomfort when ill-treated in any way, as a person would, is shown by the often intense feeling about it on the child's part. Some of the expressions of this feeling for flowers would attribute to them feelings beyond merely physical suffering. Children themselves feel sorry, sad, angry and like crying; it is thought to be cruel, sinful and wrong to harm or abuse flowers. They would not like to be flowers on account of the ill-treatment and suffering undergone by them, and the short life that they have. Some few do not even like to pick flowers and especially to throw them away afterwards or to use them in their plays on account of this feeling for them.

It is felt to be 'just as much harm to abuse them as it is to abuse a person' (M., 11); it is wicked to abuse them, and it makes my heart ache, when I see them tramped down (F., 10); the people that do it ought to be punished, for flowers have as much right to live in the world as we (M., 10); it is a sin to tramp them down and pluck them off their stems, for God made them to live on earth as we do; he also

wishes us to love them, (M., 9); one often thinks 'it is cruel to throw away a flower, or when you are picking them to leave a small one away from the rest' (M., 10).

Feelings in the higher sense of mental attributes are very many times given them; children say, that in the spring time, the flowers feel happy, good, glad,—"glad because it is warm and they can have water enough to grow" (M., 9); "glad to come out from their houses under the snow" (F., 11); and "to come out to bloom" (F., 10); gay, bright, merry, pleasant, free, delighted, "tickled when spring comes" (F., 10); "anxious to grow" (M., 12); "nice and cozy when it is warm" (F., 11); "they feel like dancing and singing" (M., 9); "like growing and being beautiful" (M., 12); "they like it in summer" (M., 12); when it is cold they feel sad, sorry, unhappy, lonely, melancholy and "like crying," "they give up all hopes of living" (M., 11); "they hate the fall for Jack Frost comes" (F., 11); "they don't like it because they would like to be with us always" (F., 11).

F., 9. I think flowers feel fresh and gay in the spring time and say to themselves—"How lovely it is, I am glad I am a flower," but when the trees are losing their leaves, they commence to shiver and shake with the cold and they say "oh how cold." When winter comes they are covered over with their blanket of leaves and quilt of snow.

M., 12. Flowers are happy in the spring because they seem to look so happy, and when you pass them they seem to nod their heads as much as to say, "How do you do," while in the fall they feel sad and melancholy.

F., 8. The flowers wake up in the spring time and feel happy, but in the fall they begin to get sleepy, and then they go to sleep.

A few of the scattered expressions show also a more or less intense animism:

Flowers are like people because they can think (M., 9); one thinks 'flowers act like people' (M., 10); they like to have pretty dresses just as people do (M., 11); one cannot name any one favorite flower 'because she feels that the other flowers will feel jealous' (F., 10).

Flowers are further endowed with moral traits by a small percentage of the children, most largely the girls, as previously in the section on the favorite flowers we saw these attributes in some cases applied to them. They would like to resemble flowers in these ways, and they are looked upon as "sweet and pure," the violet is "modest and sweet," or "humble;" the carnation is "cheerful," "pure." The lily is "so pure and beautiful," one 'would be like the rose because it makes people happy' (F., 9); one "would be like a flower in some ways, and if I tried I could be as good as a flower is" (F., 11); the dogwood is disliked 'because it looks so impudent' (F., 11).

Children think the flowers talk in a third of the returns, here also a slightly larger percentage of the girls. Some interpret their nodding, bending, and blowing with the wind as

flower language. In one or two cases, the children fancy that the flowers seem to talk to them, but the usual fancy is that in their own way, and in a language of their own, they do talk to each other. Some of the children's expressions of this belief are as follows:

I think every flower talks (M., 10); flowers talk to one another, but the talking they do cannot be heard (M., 11); flowers talk in a language as we do in our language (M., 11); I think the flowers have a way of talking to each other (F., 10); I believe when flowers swing that is their talk (F., 10); I believe flowers talk in their own language because I have seen lots of flowers bend toward each other (F., 12); I don't believe they talk, but they nod their heads when they see each other (M., 10); when people pick them they talk I think (F., 9); some flowers seem to talk and others are very pleasant; often when I go home to dinner, and generally when I eat by myself, and flowers are on the table, they seem to talk to me and keep me company (M., 12).

These fancies in general seem to show practically no decrease in frequency or intensity in the case of children between these ages, there being rather, if anything, an increase in both respects up along these years, one reason, doubtless, being that the children a little older can better express their feelings or fancies. An additional collection of returns, however, from 113 children, thirteen, fourteen and fifteen years old, seems to show a noticeable change in regard to a present belief that the flowers have feelings or that they talk; so that it seems reasonable to say that much beyond twelve years, on the average, the animism is less strong. With regard to sex distinctions; a difference between girls and boys is noticeable throughout, a larger percentage of the girls affirming these fancies, the negatives occurring more among the boys. The fancies seem about equal regarding quality and intensity. Concerning outside suggestion, nature study, literature given in school and stories or poems early heard or read, have doubtless more or less influence upon these reactions toward flowers. In regard to any influence from the first source it was noticeable that the children who have lived always in the large city exhibited these thoughts and feelings about flowers in their answers even more frequently than did the others. Any comparison in these returns is hardly warrantable, but an effect which nature study may quite probably have, may be suggested, that the learning something of the structure and habits of plants and flowers and the close acquaintance with them, may have the effect of humanizing them to some extent to the child, causing him to think of them more on an equality with human and animal life and to treat them more feelingly, fitting in with the way his imagination tends to regard them. Stories and poems heard or read at home or in school must have some share of suggestion, though they may not be definitely traced here as in the remi-

niscent fancies of the adults, they are in many cases readily and specifically acknowledged. But even if the notions of the flowers talking together and of their being capable of mental feelings and emotions, as well as of physical suffering were originally suggested or helped on from outside sources, still the fact that they are so readily assimilated and unconsciously incorporated and accepted, as has been pointed out in other studies, gives such fancies claim to individuality.

Children think that flowers are made for "their beauty," this reason most largely given, "to make the earth look pretty," "to help make the world beautiful," etc.; also, and these reasons expressed more largely and particularly with the girls, as is also their beauty, for the happiness, pleasure and cheer which they give, "to love," "to make children happy," "to make the world better," "for gladness," "to make the world and people more cheerful," "to take to sick people to make them happier and stronger." With some their fragrance is their dominant appeal, and with others in answering this question their decorative uses and associations with the dead are immediately suggested.

Flower Customs of Children. Flowers are very largely used by children in their plays and games, and many things are enumerated as made with them; about three-fourths of the returns indicating such uses. Many articles of adornment and ornaments are made by using flowers, wreaths and bouquets of various flowers, chains of dandelion stems and daisies, crowns of daisies, honeysuckle, and leaves, necklaces, bracelets, rings, earrings, trimming hats with flowers and making hats of large leaves trimmed with blossoms, dandelion curls, braiding hair with violet stems, bracelets of burrs, grasses and thistles, crosses; playthings are made in great variety, flower dolls, and 'making believe they are dolls, and dressing them up in other flowers,' dolls' hats, dresses, parasols, umbrellas, fans, dishes, cups and saucers; furniture, chairs, beds and cradles, playhouses, make-believe people, soldiers, animals, pocket books, boats from bleeding hearts, whistles, balls, for decorating the play-house, for make-believe articles in playing store, money from dandelion blossoms. The girls in a considerably larger percentage use flowers in these ways than do the boys. The variety of these usages of flowers is also much greater among them; they are used in more ways as playthings, naturally as dolls and as things for the play-house, while the matter of dress and decoration comes out much more strongly with the girls both in the number of uses and in the frequency and elaboration with which they are mentioned.

Flower-Lore of Children. The amount of flower-lore in the way of superstitions connected with flowers seems not to be

very large among these children. Most commonly known was holding a buttercup under the chin to see if one likes butter; the large proportion also and this more noticeably among the younger children and the girls asserting their belief in the truth of the saying. Less than one-tenth of all the children gave instances of other lore concerning flowers and these in most cases were given by the girls. Dandelion lore instanced was the following: blowing the fluffy head after the flower has gone to seed, 'to see if your mother wants you,' or to tell the time of day; putting the dandelion under the chin 'to see if you like butter.' Daisy lore; pulling off the petals, to tell fortunes, saying, "He loves me," "He loves me not," or repeating, "One I love," "Two I love," etc., 'to tell if your father or mother loves you best,' naming the petals and pulling them off 'to see which would be your friend;' pulling apart the yellow centre and blowing it from the hand 'to tell the number of children you will have;' pulling the daisy apart, and if the flower falls out it is time for dinner. Tickling the chin with a buttercup, if the boy laughs it is a sign he likes the girls, and *vice versa;* finding four-leaved clover for good luck.

Section B.

The returns considered in this section are reminiscent, and comprise 352 papers. Of these 239 are from pupils of the Normal School ranging in ages from eighteen to twenty-two, with some few younger and older; 189 are from young women, 50 from young men. The remaining 113 are from girls and boys of the eighth and ninth grades, from thirteen to fifteen years old, 52 from girls, 61 from boys. There are only a very few papers that are absolutely negative regarding flower fancies. In all, there were 25 adults who did not answer at all any of the questions relating to fancies about flowers, 20 among the young men, 5 among the young women.

The fancies in this section seem to classify themselves under the general headings of those of *outer* and *inner* resemblances.

Points of external resemblance largely human, some animal, some resemblances to flame, blood, sunlight, etc., through color suggestions are noted in the majority of the returns. Human faces or features are specified as seen in the large majority, about two-thirds of all the papers recording this fancy. The pansy is particularly suggestive in this way, with nearly the same number. Besides the mere external resemblance to the whole face or different features in particular in the spots and markings there is in many cases an animistic touch added; the fancied resemblance is extended to the idea that there is personality and intelligence back of the human appear-

ance and because of it. In the pansy are seen resemblances to friends; one used to name the different pansies in her mother's garden for the different people she thought they resembled (F., 20), innocent baby faces, children's faces, features of a fair lady, faces that are attractive, smiling, sunny, some seeming to laugh, others to cry, sad, sweet, saucy, innocent, mischievous, piquant, bright, cute and sly, cunning, jolly, grave, modest, thoughtful looking, 'as if they could speak;' "a pansy looks very much like a face, and as if we were going to speak to it, and it was listening very intelligently" (F., 14); one always thought a row of small pansies had features, and that they watched her, so she was always careful what she did before them, and if she ever pulled or destroyed flowers in their sight, they seemed to bend their heads and whisper together (F., 19); pansies are little children turning their little faces up with a smile and expecting one in return (F., 23); to one the pansy always seemed more like a human being than any other flower, and she wanted to resemble it, it had such a sweet face and seemed so sweet (F., 19). Pansies are little dwarfs, 'are always thought of as having eyes, nose, mouth, and a small hood.' The violet also suggests human features to a smaller number; one has seen features in the violet when it seemed as if it were hiding so it would not be picked (M., 15). Also the daisy; one always imagined she saw faces in the daisies; some resemble old persons, others young, some smiling, some frowning (F., 19); it always suggests a round, rosy-faced child (F); daisies and sunflowers look like bright, little faces (F). Other special flowers are noted in one or two instances each as suggestive of this similarity.

Blue bells are just little heads nodding on slender necks; the centre of the daisy is an eye and the petals, the eye-lashes; grass flowers are just little eyes; the forget-me-not has eyes; nasturtiums have faces and eyes; red phlox with bright centres suggest bright eyes; the black-eyed susan is an eye; the larkspur, morning glories and tulips are mouths; the snap-dragon has a large mouth and small eyes; the snap-dragons have mouths and tongues. Several are even more fanciful:

F., 16. In all flowers I have a feeling that there are faces. I always think of the pretty dainty petals as gowns and bonnets, and I imagine that the little faces peep shyly out from them, or else hide there demurely.

F., 20. To me a rose seemed most human. As a child I could readily transform a full-blown rose into the face of a lady, and that of a bud into a little child. I thought of their green leaves as green dresses, and the thorns as pins in their dresses.

F. Often thought that flowers had faces and that the bright pink roses were little girls' sunbonnets, and the yellow stamens, their curls.

The form or arrangement of the parts of the blossoms in some cases suggests persons; one always thought of the seed-pod in a pansy blossom as a little old lady in an old-fash-

ioned dress (F., 22); the inside of a violet looks like a man sitting in a chair with his feet in a tub (F., 15); in a violet one always sees a queen seated on her throne, encircled with beautiful purple (F., 20); one always made wonderful stories about the little woman in the violet for she really seemed human to her (F., 22); the minister in his pulpit in Jack-in-the-pulpit, or a man who looks as if he were hiding in a well (M., 15). One always thought of the parts of a flower as corresponding to parts of the human body—calyx, the head; the corolla, the face; the pistils and stamens, the eyes; the stem, the body; the leaves, the arms, and the roots, the feet of the flower.

Some have seen animal resemblances, though these fancies are not so numerous. Many of the ideas are not independent and individual fancies suggested by the appearance of the flower, but are clearly suggested solely or largely by the name,—adder's tongue suggesting an animal, tiger lily, a leopard or a tiger's skin, coxcomb, the mutilated comb of a rooster who has been fighting, etc. Some of the suggestions are more remote called up by the qualities of the plant, the burr suggesting the porcupine, also the sharp stiff bearded wild grass. The common fancied resemblances are the following:

Touch-me-nots suggest birds just ready to fly, a bull dog, a lion's mouth, "used to make me think of frogs and I used to gather them and make them open and shut their mouths" (F.); they always seemed ready to swallow one (F. 17). To several, pansies have suggested cat's faces, dogs or monkeys, and those with short fat stems compared to animals with short stumpy tails (F. 17). The bleeding heart has suggested rabbits; cottonwood blossoms, huge worms; a certain kind of ivy that looks as if it were crawling, always called the snake (F.); cactus, snakes, looks like a lion, chrysanthemums, little spaniel dogs; columbine, birds just ready to fly; the honeysuckle looks like a humming bird; lady's slipper, a bird, to one, a duck; milkweed pods, sparrows; nasturtium, a monkey's face; some orchids, birds or beautiful butterflies; sweet pea, a very beautiful bird, and to one, rabbits; tiger lily, a frog, a gayly colored butterfly, the red bird; "many flowers seem to be dainty birds that have alighted on flowers" (F. 19).

There are further suggestions from the color of the flowers: brightly colored red or orange flowers suggest flame and fire, red flowers, blood, and many times, yellow flowers, sunlight. "A carnation seems like the last spark of a wood fire" (F. 14); "red geraniums seem dyed in blood," 'red maple plants look flamed with blood,' poppies always suggest to one war and blood from a description once read of a battlefield where the poppies were splashed with blood; golden glow and dandelions seem like patches of sunshine, yellow nasturtiums like bursts of sunlight.

The rest of the fancies expressed in regard to flowers and the larger number of them seem to be included under the heading of *Inner Resemblances.* In this section the an-

imism comes out strongly in the personification of them in the way of mental attributes and in the feelings expressed for them.

A great many human attributes are ascribed to flowers in the way of moral qualities, over one hundred and fifty different attributes being applied to them. Some have especially likened flowers to certain people or friends, thinking of them as possessing human personal characteristics and attributes like them, a few even naming them for people where these inner likenesses seemed strong.

The qualities are suggested by the appearance of the flower, its size, color or manner of growth, also by the odor, and, with one or two, by the taste. The strength of the personification of them in these respects exists in varying degrees from merely expressing something of the outward appearance in terms of mental traits to greater elaboration of individual fancy. In general the tall growing flowers are attributed with feelings of pride, haughtiness, disdain, rudeness, selfishness, unfriendliness, etc.; the small ones are loving, sweet, modest, etc. Brightly colored and showy flowers are, similarly, bold, eager, selfish, and those more delicate in color, modest, pure, gentle, sweet, unassuming, etc. Bright flowers are also quite commonly cheerful and sociable as are those which grow closely together, in clusters or many of a kind together. Those with sweet odors are mostly of sweet disposition, gentle, tender, social, etc.; those of strong or offensive fragrance, disagreeable, ugly, spiteful, etc. Many of the suggestions are *place* associations—in the case of the flowers that seem solitary, lonely, shy and retiring. A few instances of these fancies about flowers in general, show the character of the returns.

F., 16. I cannot help associating different characters with the different flowers, and I cannot help thinking that they also have their likes and dislikes; some seem to be so simple and yet so beautiful and others are gaudy and brilliantly colored. With the latter ones I always connect the characteristic of disdain; they always seem to lift their heads a little higher than their more humble companions, and seem almost to say "I am better than you."

F., 18. Their dispositions seem to vary with their size and color. The little delicately tinted ones are sweet and modest, unassuming, cheerful and kind-hearted. If they are brightly colored they are apt to be sarcastic, selfish, etc., on the surface, with their kindness and loving traits to be found after search. Large delicately tinted flowers seem to be affected. They pretend to be what the little ones are and yet always try to thrust their goodness before one. The large bright ones are bold, careless and eager, apt to be impulsive, and confident of their own power and importance.

F., 21. Flowers have different dispositions, some are coarse and selfish, others are tender and sweet. The tall rank flowers, especially those that were not sweet scented, always seemed to me to be a little overbearing or ill tempered, while the sweet scented flowers were gentle and good natured.

The suggestiveness of the different flowers in this respect, is interesting, some special flowers embodying so many and such a variety of inner qualities and traits, yet with certain attributes applied predominantly to certain flowers.

The *rose* is to most proud (22); "the rose seemed to look down scornfully on other flowers which grew close to the earth" (F., 20); "it knows it is beautiful and stands aloof" (F. 28); "it seems to feel itself so much above the other flowers" (F.); it is the type of beauty (9); suggests gentleness, grandeur, stateliness; is jolly, happy, gay (5); suggests boldness, purity (3); it is cross, spiteful,as if it did not enjoy being petted; suggests modesty, cheerfulness, sweet disposition, dignity, bashfulness, strength of character in the double rose, 'the red rose is passionate and quick tempered' (2 each); the sensitive rose is timid and bashful; there is kindness in the rose, the creamy and dark velvety roses always seem so much more calm and dignified; it is loving, warm and friendly, honest and reliable, bright and vivacious, weak in character; "it is sturdy yet gentle, pure and always true," (F., 23); 'the climbing rose seems sociable,' 'the hundred leaved rose is deceitful,' "roses seem sociable because they grow so close together," 'seems dejected and lonely when blossoming alone on the bush,' "the rose is like a blushing maiden," "is a gracious lady in a rich robe" (F., 14); 'roses seem like society people.'

The *lily* is the embodiment of purity (57); it typifies sweetness of nature (7); stateliness (6); pride, reserve, haughtiness (5); "the lily always seems to feel itself so much above the other flowers" (F. 19); "it is haughty and does not associate with the others" (F.); suggests gracefulness (4); dignity, peacefulness and repose, is good (3); modest, true, sad, innocent (2); suggests frailty, strength, bravery, is loving, unselfish, tender, gentle, calm, independent, contented and silent, noble, "lonely and fond of solitude as if the better to impress its goodness and purity upon one" (F.); "the lily seems very pure to me, because it is so white and tall and looks so like a loving flower that no one could help liking it" (F., 14); "suggests a person who is pure, good and unselfish and represents all that is pure and sweet in life" (F., 20). One has often thought of the lily as "a pure innocent child" (F.); "a pure souled woman" (F.); "it seemed like a beautiful and graceful girl gowned in white" (F.); "a pale and delicate girl" (F.). One could never think of a lily lookiug merry and gay, but gentle, calm and dignified (F.).

One says "I always fancied the lily did not like me. It did not seem to like any one, being so tall, white and cold looking. It seemed so very proud and dignified and the calla-lilies in the house were so far above my head that I could never see them without much trouble.

When about eleven years old I remember looking at one a long while and recollect how much its purity impressed me. I fancied it liked me as well as any one, but that it was too haughty to like anybody." (F.)

The *violet* is most of all modest (56); shy and retiring (23); "the little violets seemed modest and wanted to tuck their heads from sight whenever I came near" (F., 20); sweet, meek (7), gentle and tender (5), suggests humility and lowliness, is loving and affectionate (4), innocent, quiet, sad, true, "it seemed sad and as if it had some trouble it could not forget" (F., 14); "it is modest, never pushing in where it is not wanted, but is found ever sweet and good" (F., 23); "it is retiring and inclined to hold its own sphere" (F., 24); is frail and mild, demure, contented, trusty looking, serene, sociable (1 each). 'The little yellow violets are mischevous' (F.); 'violets suggest nuns' (F.); 'the violet is the timid girl' (F.), and is often thought of as a very modest child (F.); "the violet always suggests modesty to me, and whenever I see a violet, especially if it happens to be growing in a lonely place, I often think of a lonely, modest girl who never enjoys life and the many pleasures in it" (F.); "I think every one thinks of the wood violet as being meek, modest and shy, yet very sweet and lovely" (F).

The *pansy* does not stand pre-eminently for one trait, but has many loving qualities. To many it is sociable or companionable, there is modesty (6), it is roguish and laughing (5), "pansies seem like naughty children" (F., 22); suggest a roguish boy or child dressing up like a grandmother with spectacles and they always seem to laugh at one" (F., 20); "I sometimes think my pansies look like a row of naughty, mischievous boys just out of school, and their little eyes seem fairly to wink at me" (F., 17); there is gentleness (4), weakness, 'white pansies have seemed weak and submissive,' pride, frankness and truth, meekness; it is innocent, saucy, brave, sweet, timid and bashful, affectionate (3 each); jolly, unfaithful, defiant, sly, mocking, sturdy and inclined to hold its own, "a saucy independent fellow" (F., 18); fresh and dainty, dreamy, kind and gentle, quiet, trusty and confiding, shallow; "the pansies have always seemed like little people to me, some seem cross, some pleasant, some timid and shrinking. I remember particularly one stalk which had on it very haughty arrogant flowers and I used to keep those faces turned away from a pure little white pansy near by" (F., 20).

The *sunflower* stands for boldness (14), power and strength (9), seems sociable (5), embodies stateliness, is selfish "like some people that think only of themselves and who are going to have a good time and what they want, whether anybody

else does or not" (F., 20); happy and contented (3 each); proud and haughty, cross (2); overbearing, coarse, harsh, upright, "careless and bold," "leading a sort of Indian life;" "a jolly boisterous fellow," of sunny disposition, eager and always wants to see the sun, open-eyed and wide-awake, brave, friendly, while the odor suggests hatred (M.). "Sunflowers have a very prepossessing look like some people" (F., 23); "are always so strong and sturdy looking as though they could withstand any kind of buffeting" (F.); "always reminds me of a benevolent old gentleman looking down kindly on one" (F.); "seems to have no regard for any other flower, forcing its way up to the sunshine and pure air where it can tower above the others, and look down in scorn upon those who have been more considerate of others; I always thought of it as a very strong, self-willed flower, that was determined to be seen" (F., 26).

The *dandelion* is sociable (8), "seems sociable because it grows bending over as if talking to another one" (M., 14); bold (3), suggests perseverance (2), pride, simplicity, is "rough and hardy," "happy-go-lucky and not at all sensitive" (F., 20); "a little discontented but a jolly little fellow" (F., 19); "not so sweet and gentle as the other flowers" (F., 20); "it is old-faithful" (F., 22).

The *daisy* is sociable (22), bright, cheerful, and happy (9); suggests simplicity (4), daintiness (3), purity (2), wholeheartedness, is brave, "seems brave because it stands up so straight" (F., 14); "pert, saucy and independent" (F.); bold, "always seemed to want to see everything" (F., 26); full of hope, "is everybody's friend" (F., 14).

The *buttercup* is bright and cheerful (4), stands for simplicity, is sociable, happy; "one could never think of a buttercup looking sad" (F.); "suggests a little old lady with a nodding head" (F., 20).

Asters seem sociable; the *wood aster* is sad; *apple blossoms* are wholesome and modest (F); the *anemone* is brave, changeful in mood, sympathetic and pure, sociable, and a solitary flower (M., 14); *bluets* seem pure, suggest innocence and purity, seem gentle and meek, always seem to be at a social gathering; "*bachelor buttons* are hardy frontiersmen who take life as it is and are contented" (F., 19); "are cold and selfish, not even giving a perfume" (F., 22); *bleeding heart* suggests sorrow and sadness (4); "*blue grass* seems to be very meek and to feel its lowliness" (F., 18); "*white clover* is to me like a small child beside a larger sister, the red clover" (F., 20); *chrysanthemum* suggests hardihood; the *cactus* is stubborn (2), "selfish and has thorns because it does not want any one to come near it;" a *cowslip* seems like a

very strong ship that could weather a very stormy sea" (F., 14); the *coxcomb* is proud; *carnations* seem sociable, are friendly, gay, embody truth, and gravity; the *dahlia* is independent and self-reliant, one stood in positive awe of the dahlias, they were so cold and severe that they almost frightened her and she voluntarily kept away from them in her play (F., 18), also show sociability (M., 15). In the *forget-me-not* is gentleness (2), meekness, faithfulness; one used always to think of them as loving (F., 19), and to one they always suggested a lonesome person (F.); *ferns* suggest grace, delicacy and refinement (F., 25); in the *four-o'clock* is cheefulness, "they seemed lazy" (F., 20), and one, used to fancy that they were so stuck up that they would not bloom earlier in the day with other flowers (F.); *grass* is brave (M., 14), and seems sociable (M., 14); *grass flowers* are wild and mischievous (F., 22); *geraniums* are like useful people, they are quarrelsome, voluble, look brave (F., 13); to one, they never seemed to be truly friends of hers, for they were always somewhat formal (F., 18); *golden-rod* has a haughty disposition, is proud, jolly, sociable, and is the maiden-lady of the flowers (F., 23): *hepaticas* seem like little children playing hide and seek, are dainty and lady-like; *hyacinths* suggest trust, sincerity, purity; *indian tobacco* always seemed like little old men (F., 23); the *hollyhock* is proud, overbearing and haughty (4), "bold and likes to show off" (M., 24); "*hollyhocks* are like people who like showy colors in dress and like to see and be seen" (F., 22); seem very graceful and stately, are coarse, sociable, and dull or stupid; the tall hollyhock seemed like the grandmother of the other flowers in the garden and her long deep petals were her bonnet" (F., 22); *heliotropes* suggest meekness; *Jack-in-the-pulpit* seems human and like a nodding minister (M., 14); always seemed like a noisy speaker, "seems like a nice sort of a person" (F., 19); suggests an energetic person, seemed unsociable, "always seemed lonesome to me living alone in his little green house" (F., 19); *lily-of-the-valley* suggests purity (3), has a sweet and wholesome disposition, is delicate and sweet, "seems rather sad and lonely" (F., 13); *lilacs* suggest harmony, "the lilac is beautiful, but is too conscious of it" (F., 20); *marigolds* did not seem to be as nice as other flowers on account of their odor (F., 19); *morning-glories* suggest cheerfulness (2), 'seem to be always smiling;' the *may-apple*, unsociable; the *may-flower* is shy (2), "is timid and does not wish to be seen, so it hides away under the snow" (F.), suggests purity and grace, is a very sociable little flower; the *nasturtium* seemed saucy, and hard-hearted; the *nettle* is mean; the *peony* suggests grandeur, seems bold; *phlox* seemed sociable; *poppies* suggest boldness (3), "seem bold, flaunting their gay colors like peacocks" (F.); boisterous,

haughty, quarrelsome; "the poppy suggests a red-faced man or lady with a hurrying manner" (F., 14); suggests a pompous person; "poppies are bright young ladies very fond of dress and show, vain but pretty" (F., 23); the *primrose* suggests daintiness and purity; the *petunia* is complacent; the *passion flower* always seemed mysterious and melancholy (F.); the *pond-lily* looks pure, "seems so bright and happy in the early morning sunshine" (F., 13); the *rosin-weed* is rough, coarse and uncouth (2); the *sweet-pea* has a sweet disposition (2), suggests hope, white sweet peas suggest purity; "always seemed so tender and so like a little child clinging to some one for support" (F., 20); "they are rather shy, but are cheerful little friends" (F., 19); refined and elevating, pert and saucy, suggesting simplicity and delicacy; the *sweet william* suggests peacefulness; *wild sweet williams* seem gentle and meek, lonely; the *smart-weed* suggests perseverance; *sweet alyssum* always seems to be sympathetic; *spring beauties* suggest daintiness (M., 24); the *sensitive plant* is timid (M., 25); the *thistle* has a haughty disposition, is defiant, sharp and repellant in its nature; "is a solitary outcast and the flowers are all afraid of it" (F., 20); *touch-me-nots* are repulsive like some people, and are sociable flowers; *tulips* suggest gentleness (F., 15), pompous people ,are quarrelsome, "seemed like young girls wearing pretty summer gowns;" the *tiger-lily* seems bold (3), suggests pride (2), fierceness, seems vain and disagreeable, self-satisfied, to one, as a child, they appeared strong and seemed to possess a good deal of character (F., 23); the *verbena* is generous, is delicate and pleasant (M., 24); *wild roses* are shy, sociable, to one, the wild rose always seemed so bright and happy-looking, never covered its face when it rained, always stood up higher than the other flowers in the meadow, yet seemed to have many friends, could be seen for a long distance, and after its pretty pink dress was gone it wore a red one (F., 22); the *zinnia* suggests strength (2), has a hateful and spiteful disposition, seemed a sociable flower; "zinnias are like women dressed in bright calico dresses."

Many imagine friendships and enmities between flowers and between flowers and animals, insects and also people. Their friendships and enmities between themselves are commonly fancifully suggested by various similarities or dissimilarities between them in appearance, size, color, manner of growth. Some of the friendships are fancies from place associations. Flowers of the same kind are friends, also the more beautiful flowers with each other, the larger flowers together, the smaller ones among themselves; sometimes the larger ones and the little ones that they seem to protect; the brightly colored and more showy ones, and the more delicate ones, each with its

own kind, also those growing together and those usually found growing in the same place. Some would fancy them as too good and loving to ever have unfriendly feelings one to another but as all living happily together, those of the same kind as one family and having the same feelings toward each other, that children of the same family would, and those growing near together sympathizing with each other in misfortune. Special friendships are fancied between certain flowers, as between the rose and the violets and carnations, the lily and the violet, the old fashioned flowers being also thought good friends together; friendships between the pansies, violets and lilies of the valley; the golden rod and aster; the daisy and the golden rod,—one when a child believed the golden rod and daisy were married (F); to one the daisy and the buttercup seem to be fast friends, also the violet and the sweet anemone (F. 19); the nasturtium and the morning glory seem to think a lot of each other (F. 15). Jealousies and enmities are imagined between them, the smaller flowers and those less beautiful having unfriendly feelings toward those larger and lovelier than they, and rivalries also existing among the more beautiful; some seeming to turn away and to say, "you are not as good as I am." One always thought of the rose, pansy and those more beautiful flowers as being on bad terms with or thinking themselves above the common dandelion or buttercup and looking with contempt on the common flowers as a stylishly dressed lady would look on a poorly dressed one (F. 19). The rose repels the buttercup and is an enemy to the lilac; the daisy seems jealous of the buttercup's golden cup and the other flowers are jealous of the daisy's white frill (F. 17). One used to think that tulips and hyacinths were jealous of each other, and each would see who could look the nicest (F.). To one it always seemed that one flower tried to be more beautiful than another (F. 19); another could never think them envious, but used to feel that if she plucked the prettiest one, the others would feel their shabbiness. Tall growing flowers and those which seem to push and crowd like the sunflower, hollyhock and dandelion, and the weeds seem unfriendly and cruel to the other flowers. Their movements and actions express their feelings toward one another; one used to think when she saw two pansies bowing toward each other that they were two friends and if they leaned from each other that they had quarrelled (F. 20). Flowers are generally fancied as loving the bees, butterflies and birds, especially, the humming bird. The bee is thought of as the flowers' special friend, and certain flowers like the honeysuckle, rose, clover, cherry blossom, hollyhock are particularly his friends. Insects, birds and the flowers are also fancied as talking together, the flowers seem to open their petals to receive

the insects, and to call the birds whom they love nearer to them. One always imagined when she saw a humming bird or butterfly settle on a flower and close its wings that they were having a confidential chat (F.). Flowers hate and fear insects and worms that harm them, large animals that eat them or injure them and people who treat them cruelly. With some of the animals of the pasture, some flowers that grow there seem to be on friendly terms, and they love people who love them. The cultivated flowers have been thought of as friends to good people and the domesticated animals, the wild flowers as friends of bad people, and wild animals. Noticeable in this section is the strongly imaginative character of these ideas of the friendships and enmities of flowers; the real enmities and the suggested relations in which more of the scientific element is prominent are few in number.

Animistic notions of the physical sufferings which the flowers experience and the emotional feelings which they may have are as frequently brought out in the reminiscent fancies and even more intensely where the expression of such ideas can be more elaborate than in the returns from the children. The feeling on the part of children for the flowers when they see them ill-treated, withered, etc., is constantly evidenced in these returns and in some adult cases it is spoken of as still existing intensely where the actual belief that flowers have feelings is no longer acknowledged but where the feeling about it seems to survive. The fancies are along the same line as those in the previous section under a similar heading, that flowers have feelings as people do, that it hurts them physically to be picked or harmed in any way,—locking the heads of flowers together seems especially cruel, and pressing them together in a bouquet hurts them. It is quite a common fancy with a number when younger that the sap or juice which came from the wounded stem was the blood which the plants shed because they were hurt, or, as a few have believed, that it was the plants' tears. They have felt that they suffer when neglected, feel thirsty just as a person does when not given water, that they suffer from the heat as people do, that when they wither it is because they are tired, that they feel sick and like a person dying.

A common fancy with many is that the flowers must feel sad to be picked and to have to leave the other flowers and that those who are left behind feel lonesome; one, many times could not bear to pick the violets especially for she felt that they wept if separated from the others (F.); another (F.) remembers she would never pick some wild columbine growing near her home because she thought the children columbine would be lonely without the parents, and as she could n't tell the children from the parents, she left them all undisturbed; (F.), in picking pan-

sies would often leave a few to take care of the others that were n't out enough to be picked and keep them from being lonesome. One when picking wild flowers used to stop and think how sad they must feel to be taken away from their companions and the pleasant life which they led, while the pain that she thought they must feel in being picked often restrained her from picking them (F.); one would many times go back and pick a flower which to her looked lonesome (F. 19).

A few have fancied that the plant mourned when its flower died, and that the flowers withered and died from their loneliness and grief at separation from the others; one thinking the reason they withered was because they had cried themselves to death for their mother plant would often refrain from picking the less sturdy flower (F., 22); also, that, when the liquid came from a flower that was picked, it was crying for its mother and sisters and that it just died because it could not go to live with them again (F., 20).

Some have thought that the flowers feel slighted and that it hurts their feelings if some are picked rather than others, or if they are thrown away after being picked. The following typically illustrate these individual fancies:

F., 23. I always thought the wild flowers must feel slighted when the cultivated ones received so much attention, and so I spent much time watering the daisies, buttercups and dandelions.

F., 24. I used to wonder if flowers minded being picked, and if I had in my hand a flower whose stem was broken off near the head, I felt sorry for it, and would not have it thrown away for fear of hurting its feelings. I always hated to throw away withered and old flowers, for it seemed that they must like as much care and attention as the bright fresh flowers.

F., 19. I thought they felt it when they were appreciated and when they were not. If picked for a good purpose, it was a joy to them, but if neglected, they were broken-hearted and soon died.

They are thought of as glad in the bright sunshine, happy in the rain, "for they nodded and smiled when the rain washed their leaves," thankful to be watered, sorry to leave the sun, afraid of being harmed, frightened in a thunder storm; one (F.), when a child of four until she was about six, wondered if they were not frightened when night came and they were left alone in the dark. Some, as children, out of this feeling for flowers, have kissed and caressed them when they were injured, and to encourage them when they seemed wilted and sad. Several tell of even burying the withered flowers, thinking they died just as people do; one, used to believe that the flowers went to heaven when they died (F., 19).

A few of the other interesting and varied individual expressions of these same ideas are added in these quotations.

F. When quite young flowers seemed to feel, see and think just as

we do; they always seemed to me to be partly human and to understand.

F., 17. When the sun shines they lift their bright faces to the sky, when the sun is hidden, they droop their heads. They seem glad when the sun shines, for their faces look brighter, and they seem to sing together in their glee. When the wind blows they dance to its music. They seem like little fairies skipping about in the fields, and like little children as they dance on the hillsides.

F., 19. Ever since I can remember I have thought that flowers had feelings and looked reproachfully at me when I left them without water or proper care. When I was very small, I used to cry when the first snows fell on some loved rose bush or vine. I have cried a good many times when I looked at my petunias after a hard rain, and saw the petals all bruised and torn, for I always had a feeling that they were suffering pain.

F. When I was about ten years old, a beautiful calla-lily was faded and had been thrown out. I felt so sorry for it I decided to keep it and care for it. I wrapped it in a damp cloth and kept it in the cool cellar. Every day I looked at it, and kissed it good night every evening. It seemed quite as real to me as a real human patient.

One, as a little girl, when she saw the dead autumn leaves falling, cried and took them to her mother to have her sympathize with them.

A number of the reminiscent papers mention fancies about flower language, many mentioning their childish beliefs or fancies about flowers similar to those already given in the first section, believing or imagining that the flowers talk among themselves, and in a language of their own, or that the flowers, birds, animals and insects all understand one another. When swayed by the wind, and when they nod and bend toward one another or nestle together, they have been fancied to be whispering, talking and confiding among themselves, or to the wind, to whom they give messages to take to other flowers, and at night to talk together. In some cases, among those in the early teens, the belief in the flowers talking is stated as a present one, while with several among those older, the belief or fancy is still stated strongly as such, about equal proportions giving their childish ideas in this regard as beliefs and as fancies, when they 'fancied they talked,' 'imagined they did' or 'they seemed to them to talk.' Some as children have talked to the flowers as they would to human beings or to their dolls, always believing that they enjoyed it and understood. Their language may be expressed in their looks and movements, and children interpret it according to their individual ideas. When dry, they seem to ask for water, or to say, "please give me a drink," "do not pick me," "we love you," and to say "How do you do?" as they pass them. When they bend and sway they seem to nod and bow, welcoming or beckoning one to come to them, or to show their approval or disapproval as a person would. One always fancied that the daisies moving in the breeze were bowing to one another greeting and kissing each other (F., 17), or that they were polite to each other (F., 19), while a field of

daisies or violets always seemed so happy with their friends on every side to whom they could talk (F., 17); one always fancied that the cute ones were saying something cute to each other, trying to dodge from sight (F). Though the beliefs and fancies about the flowers actually talking in vocal speech or even more silently to one another are almost entirely reminiscent, as we should naturally expect, many in the late teens and succeeding years hold to their possessing a language in a higher sense, largely in the moral qualities with which they now invest them, and also in the beautiful thoughts which flowers inspire, and the feelings that in certain moods they appeal to. Their beauty inspires to right and true living, suggests holier thoughts of the goodness and love of God, and brings feelings of joy and peace.

In their own words several have expressed this appeal as follows:

F. As to the language of flowers, they seem at all times to inspire one to live pure, think true, and do right. When I am surrounded with flowers I usually have a sense of satisfaction. Everything is as pleasant as can be.

F., 20. The language of flowers to me is that they are beautiful, and anything beautiful appeals to me strongly; it makes me want to be good and to have everything harmonize from one's actions to the environment.

F., 19. Flowers speak to me of the kindness of Mother Earth, and of the love of Christ for us.

F., 28. Flowers have no direct language but they appeal silently to different feelings. Their personality expresses much. There is a subtle atmosphere about them that says different things to me.

A few scattered individual expressions further invest flowers with animate life, from their movements and appearance, etc.; several have fancied them trying to hide, one used to think they grew down in the valley, because they were bashful (M.).

F. When the little twigs grew out and branched, I thought they were stretching their arms out to one another. Sometimes I thought they were looking up to heaven and praying.

F. When the leaves turned over before a rain I thought they were asking God for water.

F. Some of the little blossoms look to me just as if they were stretching out their little arms asking to be picked.

A little variation of these phases of childish fancy already quoted comes out quite strongly in some of the replies where a kind of responsive sympathy and feeling of especial kinship seems to be found in the flowers. Some have seemed to feel this quite intensely as children. Direct quotations from the returns show this individual significance most clearly.

F., 20. As a child it seemed as though some flowers were easy to get acquainted with while with others I seemed a perfect stranger. Some flowers seemed to whisper good things to me and I felt better for being around them while some, especially any that are bright red,

seemed to be inciting me to mischief and daring me to do things I ought not to do.

F., 22. I always told my troubles to the flowers and trees and grasses in a language I was sure they understood. One night I had a long cry because I could n't keep from walking on the grass and for days would go about trying to step on stones. I would give them a drink and always talked to them as if they understood.

F. I always thought that flowers understood me and knew and sympathized in my little joys and sorrows. I never thought they knew anything but joy; they are so beautiful that they appeal to me strongly and make me want to be good.

F., 26. Among my earliest recollections of flowers is that of sitting by my mother's pansy bed. The other flowers were attractive to me but the pansies seemed to me human beings. I would sit by them and talk to them and tell them of my troubles and pleasures as it might be. I thought they were lonesome when I went away and were always glad to have me return.

F. I felt I understood them and was never lonely in their company.

M., 24. Flowers always seemed to have the power to talk to me. When I was small whenever I would get angry and want to run away from everybody I would nearly always go out into the orchard or meadow and would invariably go to picking flowers. I would talk to them and often I have imagined that they talked back and shamed me for my rashness in getting angry.

F., 19. Many times I have kissed, petted and sung to the flowers I loved best.

F., 17. I often fondle and caress flowers and catch myself talking to them.

A few express fancies about fairies and flowers; several have thought of the flowers as the homes of fairies, or of the flowers as being something of fairies themselves. One used to think the flowers left the ground at night and held fêtes; (F., 18) partially believed that flowers were inhabited by elves and fairies and that at night the flowers often had a ball at which they danced and had a very good time. To one (F., 22) the wild rose was the fairy goddess and her yellow pollen, her golden wand which she waved when the wind angered her. Another (F., 19) used to think that flowers were fairies in disguise and so could talk to each other and to some people, insects, and animals.

Associations of Flowers. Many have more or less strong associations connected with flowers; (1) most largely with death, (specified in nearly 50% of the returns) in the large number of cases the association being merely general, but in many, however, connected with particular instances, the death of friends and persons near to one. White flowers or the delicately tinted ones are most frequently thus associated, also those with heavy fragrance, quite naturally largely those suggested and prescribed by custom. (2) With places (32%), most of these associations being naturally of purely local and personal interest. Certain flowers recall their homes to many, or places where they have earlier lived, home gardens, friends' gardens

and their homes, churches, various out-door places, fields, meadows, woods, hillsides, river banks, brooks, etc., certain parts of the country where they have been seen growing in profusion or beauty or where they were seen or gathered for the first time; many memories of persons or happenings are also called up in this connection. (3) With friends (22%), flowers being associated with friends or certain people, because some special flower is the person's favorite, from experiences together, or because the flower seems suggestive of the qualities of the person. Other associations with certain events, occasions and experiences are mentioned—weddings, commencement time, Easter, Decoration Day, Christmas time, social occasions, the sick room, birthdays, the stage, etc. The following are typical of the more individual associations.

F., 17. When a child I loved carnations but at a funeral of a very dear friend there were carnations upon the casket, and from the cemetery I brought home one and placed it in alcohol. Since then I cannot bear to see a carnation, smell one, or even think of one; it always makes me think of death.

F., 17. One of my strongest associations with flowers is with the rose, and this flower seems to talk to me of my sister who is dead. It was her favorite flower, and I think this in some measure accounts for the feeling. I never see or smell roses without thinking of something she had said about them; they seem to talk to me of her.

F., 18. I have never liked marigolds because of the mythical story of King Midas which I heard when a small child. Zinnias I have always enjoyed, even though they are not pretty, because a very dear friend always had her back yard filled with their blossoms, and she always allowed me to pick them.

Odors of flowers, with some, are strongly suggestive both in the way of their having strong associations and of producing psychophysical reactions. In these ways their fragrance has suggested most largely death, funerals; certain places,—out-of-door places, the wild woods, green hills, prairies, open fields, running water, home, church, the sick room; friends, various occasions, weddings, commencement time, festive occasions. Their odors are suggestive of spring time, hot summer days, sunshine, freshness, solitude, and the coolness of the woods. Some produce feelings of depression, of solemnity, or as of something impending, or make one feel languid. To one, the smell of heliotrope always suggests the cutting of steel (F., 17); with another, "the smell of the rose makes me feel like reading a story of adventure" (F).

F., 18. The odors have strong associations; violets always make me think of beautiful women in palaces, and tube-roses of some dreadful crime; they always make me feel not only physically but mentally sick; I cannot bear them. The odor of hyacinths makes me think of church on Easter Sunday.

F., 17. Whenever I see or smell tube-roses I always think of death and imagine I am in the room with a dead body.

Superstitions. Not quite half of the returns gave superstitious usages or any superstitions connected with flowers; those most frequently mentioned were 'holding a buttercup under the chin to see if one liked butter;' telling fortunes with the daisy in various ways, blowing the dandelion after it has gone to seed 'to see if your mother wants you,' and to tell the time of day; also the superstition that the four-leaved clover specified good luck, and that looking at a tiger-lily would cause freckles. Mentioned a few times each were the following: holding other yellow flowers like the dandelion or cowslip under the chin to see if a person liked butter, telling fortunes with any petalled flowers, or pulling off the petals to tell if a wish will come true, 'if you blow all the fluffy part of the dandelion, it is a sign you'll have a good dinner;' the one finding the first wild flower or the first violet in spring, will have good luck; to pick the last rose is ill luck; milk from the milk weed causes warts; a person wearing flowers that wither quickly will soon die; flowers or fruit trees blooming out of season, a sign of death.

Nature study. In out-door work directly with flowers in the way of planting them and having gardens, more than four-fifths of all the number report of having had this sort of work. A little larger percentage with the girls had worked among the flowers than with the boys, more of them also seeming to enjoy doing it; of the children reporting directly, more in the large city had had gardens, or planted seeds than of the others. Of the influence of this contact with the flowers, a number especially state that they thus came to love them more, to appreciate them and to be more interested in them. Some few acknowledge that such work 'made them more careful with plants,' 'made them sympathize with them,' 'gave an intimate feeling with them.' About a fourth of the adults spoke of their study of Botany and its influence upon their thoughts and feelings; that it made them 'more interested in flowers, and in their modes of growth,' 'increased their love for flowers,' 'made them observe them more closely, and notice them more especially the wild flowers,' 'made flowers have new beauties to them, and seem more wonderful.' The effect in some few cases was to humanize them more, making them 'seem more like human beings,' and 'as if they had sense and intelligence;' several speak of disliking Botany for the reason that they hated to see the flowers pulled apart and mangled. Five in all acknowledged that such study 'had taken away many fancies about them,' that the flowers thereby 'lost feeling' to them.

Influences from literature, stories or poems read or heard in childhood are acknowledged in a number of the returns, both in the way of shaping the fancies about flowers, though the acknowledged suggestions here are not very numerous, and in

influencing the attitude toward them. Specific stories or poems are mentioned in some cases, though more usually the answers here are more or less general. Some simply say that the stories or poems 'have increased their love for flowers,' 'made them fonder of them,' 'made them have more reverence or regard for them,' 'made them think more about them.' As influencing more the animistic feelings in regard to them, the typical expressions are, "made me think they had feelings and must suffer," "seemed to have more life to me," "made me feel for them," "made me more thoughtful of how I used them," "made me more appreciative and tender of them" (F., 20); "caused me to have a kindlier feeling toward flowers and often to feel for them especially in dry weather" (M.). Several have also acknowledged that they "made flowers seem more human" or "more like persons," "influenced the fancy that I already had that they had human attributes" (F.); "made me personify them more," "after reading 'Flower Fables,' I imagined fairies in flowers, and each flower had an individuality to me after that" (F., 20). Some have indicated such suggestions in giving their definite fancies, a few (4) saying that they received the idea of flowers talking from reading or hearing stories of conversations between the flowers. One was quite sure this fancy of hers about them originated in a dream she had when about seven years old (F.). Fancied external resemblances are acknowledged as thus suggested with four; one would always imagine children's faces in the pansies from pictures of faces looking out of pansy blossoms in one of her books (F). With one (F. 20), "The Reaper and the Flowers," which she heard when quite young, first roused the idea of flowers resembling children, and she used to walk around the flower beds and look carefully into many flowers to see if they really looked like children. Human attributes as applied to flowers were acknowledged as directly and definitely suggested with eight. Friendships and enmities were first thought of and imagined after reading about them, as acknowledged with two. Two said they had thought nothing about flowers possessing feelings until reading a poem which suggested this idea and hearing people talk about it. Several would always afterwards think of the flower just as the poet had written of it. In several instances, too, the mythological stories of certain flowers—hyacinth, narcissus, anemone,—had aroused special sympathy for these flowers.

The literature which was given on most of the returns as favorite poems or stories or those which had influenced the thoughts and feelings in any of these ways in regard to flowers, would seem to be the literature most commonly given in school rather than the real preferences. Most frequently

mentioned were the following: "The Fringed Gentian," Wordsworth's "Daffodils," "Rhodora," "Death of the Flowers," several poems on the Violet, particularly Wordsworth's lines about that flower, "The Death of the Flowers," "To a Mountain Daisy," Tennyson's "Little flower in the crannied wall," Wordworth's poems on "The Daisy," "The Reaper and the Flowers;" also the classic myths of Hyacinthus, Narcissus and Clytia and the story of Picciola by Saintine.

In summing up this material on flower fancies a certain general classification regarding the source of the ideas has already been implicated. The fancies may be all considered as suggestions and associations natural and artificial. Some seem innate and entirely individualistic, displaying an intense and elaborate degree of animism and personification which any suggestion from without is insufficient to explain. Some, as already implied in previous sections, in the fancied resemblances, in the traits applied, and the fancies of their friendships and enmities, are naturally and directly suggested by the flowers themselves, in various ways. Some arise from place associations and some few are from associations with the name. Some are more or less artificial and derived in greater or less degree from literature and hearsay. Noticeable throughout are sex distinctions, which come out particularly in the returns from adults, in the appeal to adolescence. Though the numbers and proportions do not justify entirely unqualified comparison, there are as a fact here, many more absolute negatives regarding these ideas among the young men, and the ideas expressed are noticeably more matter of fact, less elaborate and constructive, while those expressed by the young women are many times more numerous, intense and fanciful. Regarding typical adolescent changes, the whole appeal has with the teens, a far wider and more inward meaning. With the child, the appeal which flowers make is purely to the senses physically, and the feelings ascribed to them are predominantly and acknowledgedly upon a physical basis. Sight and smell as predominantly affected, with the child mediate likes and the corresponding aversions in purely sensuous ways. With the teens, the sense impressions are more deeply and subjectively interpreted; the flowers' appearance in various ways is taken as indicative of inner traits and attributes, color especially is felt and described much more intensely and interpreted symbolically. The deepened sense of their odor causes it to be largely an index to the human attributes which the flowers now seem to possess and suggestive now of their symbolism. Their odor, too, is capable of arousing associations. In touching flowers, delight in "feeling" them on account of the velvety softness and coolness of the petals, and burying the face in them and fondling them, caressing and

kissing them for association's sake are several times specified as heightened reactions to this sense in later years.

Comparing the thoughts and feelings aroused by flowers as evidenced in these returns with impressions which they have made upon the mind of man from remote times, as contained in the great body of folk-lore relating to plants and flowers, we find in many of the ideas themselves and the varied expressions of them much that is essentially similar. The notion of plants possessing a life and personality analogous to human existence, reasoning from the same observation, as does the child now, has prevailed among primitive races from the earliest times. The doctrine of plant-spirits, according to Tylor,[1] "lay deep in the intellectual history of Southeast Asia;" the natives of the Eastern islands ascribe "varua," surviving soul or spirit, to plants as well as to men and animals, and hold that each has its "la" or spirit, the Malays addressing and caring for the rice as though it were a person, the Fijians believing in the survival of plant-souls in a life after their death.[2] The Wallachians have an elaborate superstition that every flower has a soul and that the water-lily is the sinless and scentless flower of the lake which blooms at the gate of Paradise, to judge the rest, and that she will inquire strictly what they have done with their odors.[3] The South Sea islanders hold that the scent of the flower is its spirit.[4] With native American races, the idea of the indwelling spirit in the different forms in the vegetable world is manifested in their totems and in the plant names in various tribes prominent among them and other peoples, while with Indian and Australian races certain plants are tabooed as articles of food by dietary laws through their being *kobongs* of the tribe. The conception of plant-souls has entered into the religion of certain Eastern tribes in the doctrine of transmigration where among Brahmins of the 17th century, and among lower tribes of the Hindoos, to-day, it is believed that the spirit may enter into plants.

This same feeling that plants possess a sentient life and personality led in race history to plant-worship which was widely distributed in early times, holding a prominent place in the history of primitive belief, and which prevails to-day among rude tribes, while its survivals exist in various forms. A most interesting example of this animism still existing as active among a people now and illustrating how it may mount to a defined form of worship, is found among the Mexican Indians.[5]

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[1] Tylor: Primitive Culture, Vol I, p. 427.
[2] *Ibid.*, pp. 428-9.
[3] Folkard: Plant Lore, Legends and Lyrics, p. 463.
[4] Dyer: Folk-lore of Plants, p. 17.
[5] Lumholtz: Unknown Mexico, Vol. I, Ch. xix.

To them, plants as well as human beings have souls, and are attributed mental qualities and feelings of pleasure and pain. They are believed to talk and sing, and when angered or insulted to take their revenge. All this is believed in high degree, especially with regard to the species of small cacti, several varieties of which are designated by the natives as *hikuli*, the eating of which produces a state of exhilaration. From its effects it is believed to be all powerful for good and for protection against evil influences. The plants are considered demigods who have to be treated with great reverence and to whom sacrifices have to be offered. Hikuli is ranked with the highest native deities; the Christian Tarahumare makes the sign of the cross when coming into the presence of the plant; it is always saluted in the same way as a man and supposed to make the customary responses to him. It sings in the fields where it grows, so that the gatherers, who before starting out, must purify themselves, may find it attracted by its beautiful singing. The plants are welcomed with music by the people; the hikuli plant is not kept in the house, but in a separate storehouse, for it is very virtuous and would be easily offended at the sight of any unvirtuous act. It can never be taken from its jar or basket, until meat has been offered it for otherwise it would eat the Indian's soul. Such, in brief, are some of the points of a cult which exhibits a marvellously developed animism. Aside from the elaborate worship of this particular plant, veneration is also felt for those believed to possess curative properties. The lily is invoked with prayer for help, its fragrance being believed to be a power in curing sickness and averting sorcery.

The utility afforded by various plants through their properties seems largely at bottom in the early and primitive peoples' assigning some sort of presence to them to account for their effectiveness, which made them thereby objects of awe and reverence. Their beauties of form, color and fragrance, especially in those warmer countries where they are of such wonderful and strange beauty and gorgeousness, naturally as well roused these same feelings. The impression which a beautiful flower of our land makes upon us is a faint trace of that intense and heightened impression to primitive and ancient peoples with their notions of the world of nature, which is flower-worship. Sacred plants and flowers in Oriental countries testify to a more generalized and higher stage of the original belief of a personality in each plant, and to the impression enforced by contemplation of its usefulness or beauty. The plants and flowers dedicated to the gods and goddesses in Classical and Teutonic mythology, in Christian times transferred to Christ, the Virgin, and the Saints, now evidencing by their names and their prom-

inence in church observances such association and consecration are instances of plant worship at bottom.

The Greek myths of the transformation of human beings into flowers were the expressions of the analogy which they recognized between plant-life and human life. Similarly the various legends of flowers springing from the blood of dying persons the more ancient legends having their parallels and adaptations in different lands and ages, further embody the idea in a little different way. "In German folk-lore, the soul is supposed to take the form of a flower, as a lily or a white rose, and, according to a popular belief, one of these flowers appears on the chairs of those about to die." [1] The German legend of the *Wegewarte*, as they call the succory, stories of flowers springing from the graves of the dead, these and analogous instances illustrate in legend the notion of a parallelism in plant and human life resting more directly upon a conception of them as the habitation of the departed soul. [2]

Notions of the connection of fairies and flowers were once current among Teutonic races and are even accredited more or less in certain districts even now. Various folk-names of flowers, even in the East, the Chinese name for their New Year's daffodil signifying "Water Fairy Flower," and numerous traditions connect them with fairy usages.

Associations of flowers with death and funeral rites are reflected from a widespread use of them in such connection from the most remote times. Different flowers have with different peoples been most appropriately employed, the symbolical meaning attached to them through their appearance or nature many times largely determining their choice. The nations of antiquity used flowers to strew the graves and deck the tombs. The amaranth, its name given by the Greeks from the nature of its blossoms, signifying "unfading," "undying" and hence symbolizing immortality, was much used, also the asphodel and mallow which in some mysterious way were believed to nourish the dead; so the rose particularly among the Romans. In Italy, the periwinkle is Death's flower; in Mexico, a flower from its common usage is the Flower-of-the-dead.[3] With certain primitive peoples, the reason for the use of flowers in this way was in direct accordance with the most primitive conceptions concerning plants. The Tahitians, for example, who endow everything with soul life, believing that the scent is the flower's spirit, supply their dead for many days with the most beautiful and sweet scented flowers holding that their souls are thus

[1] Dyer: Folk-lore of Plants, p. 12.
[2] Philpot: Sacred Tree, pp. 81-84.
[3] Friend: Flowers and Flower Lore, Vol II, p. 571.

transmitted to their service, and may sustain them.[1] In South Wales the flowers which are used in abundance for strewing the graves, must be only the sweet-scented ones.[2]

Their use in marriage rites also dates from ancient times and is based upon the conception of flowers as symbols of fertility, while their employment on all ceremonial occasions and for decoration and adornment, based anciently on religious significance, has a widespread and universal history.

The suggestions aroused by the appearance of flowers in the way of external resemblances have been long since revealed in many plant names, a subject, which in its complete study, would be found to furnish the key to much in their folk-lore. Mr. Earle has said, "Plant names are often of the highest antiquity and more or less common to the whole stream of related nations. Could we penetrate to the original suggestive idea that called forth the name, it would bring valuable information about the first openings of the human mind toward nature; and the merest dream of such a discovery invests with a strange charm the words that could tell, if we could understand, so much of the forgotten infancy of the human race."[3] Names derived from natural history are very numerous, from the roots, leaves or flowers suggesting animals or parts of their bodies. Many of the names in common use express fancied resemblances to animals and birds. The Latin derivation of the columbine is suggestive; there is also the bee flower so-called for "any one unacquainted therewith would take it for a living bee sucking of the flower."[4] Some more fanciful are "cats and kittens," "hens and chickens," "goose and goslings," and those readily suggested names among the orchids. Human resemblances have been largely noted. In Mexico the natives stand in great awe of a flower which they call by a name signifying *hand-flower* which they worship because of the remarkable human resemblance.[5] Among folk names are the fox glove, also the Finger Flower, its Latin name according to Linnæus given it from such resemblances, Fingers and Thumbs, Deadman's Fingers, Devil's Head, Angel-eyes, the old English name Day's eye of the daisy, etc. The human likeness fancied in the pansy has long remained expressed to us in many quaint names in our own and other languages also, Three-Faces-under-a-Hood, Cuddle-me-to-you, Love-in-Idleness, Tittle-my-Fancy, Jump-up-and-kiss-me, etc., which testify to the universal sense of kinship inspired by this favorite. It is also related that this flower,

[1] Miss Lambert: 19th Century, Sept., 1878.
[2] Folkard: p. 198.
[3] Dyer: Folk-lore of Plants, p. 175.
[4] *Ibid.*, p. 173.
[5] Chambs Jour. VIII: 165, art. "Flower Worship."

from its grotesque appearance resembling, "to a fanciful mind an animal with arms and a head projecting and stooping forward" caused Bertram, who was thus led to examine its construction, to devote himself to the study of plants which made him famous as the first American botanist.[1] Other real or fancied resemblances to persons are seen in the old names, Parson and Clerk, Lords and Ladies, Quakers and Shakers, Soldier Orchis, Curl-Doddy, an old Scotch nickname fora flower which looked like a boy's curly head. Other similarities suggested are evidenced by such names as Venus'-chariot-drawn-by-two-doves, Venus' looking glass, flag, key flower, Ger. *Schlussel blume*, David's Harp, a nickname for the Solomon's seal, tulip of Persian derivation from *dulband* turban, while the buttercup was originally button-cop or button-head from its resemblance before the flower opened to a stud of gold, and its name *paigle* derived from the word for mirror recalls its present use in children's play. In color names there is crocus, Gr. saffron, iris, from its flowers being of a variety of colors like the rainbow, snowdrop, Gr. galanthos, lilac a Persian word so called from the color of the flower, chrysanthemum, literally gold flower, etc. Conversely our color epithets as variously applied are many of them directly flower names. Certain old names as "dazzle-flower" for the dandelion, "flamy" for the pansy in reference to its colors seen in the flame of the wood, with our names and comparisons in more common use evidence the strength of the color resemblance.

On the more practical side of the external resemblances noted in plants and flowers rested the doctrine of plant signatures "an ingenious system elaborated for discovering from certain marks or appearances on the various portions of a plant's structure the supposed medicinal virtue attached to it," which was so prominent in the old medical theory and in accordance with which many plant names were given. Likewise, their various markings, form, arrangement of parts, color, have suggested much of the symbolism connected with them and existing to such an extent in ancient civilizations, the trefoil and the passion flower in later times being invested with much sacred symbolic meaning.

The ascribing of inner attributes and traits of character to flowers, from their various characteristics and peculiarities, is largely paralleled in the 'Language of Flowers' which forms an important part in their folk-lore and which can boast of a widespread and ancient history. Ancient Oriental peoples would seem to have been able to communicate entirely by floral signs, and down to the present where symbolism is so prominent,

[1] Folkard, p. 484.

"every indigenous flower has become the symbol of some attribute or idea."[1] Greek legends attest to the poetic feelings inspired by flowers and the human interest attaching to them in the minds of these beauty-loving people whose common expressions in conversation betrayed the influence of impressions from the flower world. "There was no flower to which their imaginations had not affixed some meaning." In the East again the Malay words for flower and woman are identical, betraying the close human associations. In more modern times and countries, these older sentiments and ideas aroused by the flowers have been perpetuated by their acceptance and added to by individuals so that the numerous dictionaries of flowers and floral vocabularies are the results of the compilation of such symbolism from both ancient and modern sources. Thus familiarly, the anemone typifies brevity or sickness, from its fragile nature; flowering almond is a symbol of hope, or haste and vigilance, in scripture; grass, usefulness from its many beneficial qualities; balsam, impatience; primrose, sadness of death in youth from its flower fading early, also typifying modest worth; snowdrop, consolation and hope; narcissus, self love; ivy, fidelity; hyacinth, emblematic of what is sorrowful and sad, from legendary associations more particularly.

The common ground of the fancies of childhood and youth, and those expressed in poetry, is shown in a few scattered quotations from among the countless impressions, some being cited more or less indirectly. The rose has been a favorite of the poets from the early classic and Persian writers, and the 'pathos of the rose' has been a frequent theme. In the numerous epithets applied, it is 'the bravest of the flowers, the love of spring;' "pure fiery rose, rival of the flame in modest maiden guise;" "the virgin rose," "the grace of the earth." So "you violets that first appeare by your pure purple mantles known, like the proud virgins of the yeare;" "the chubby daffodil saucily nodding;" the moccasin flower 'yet shy and proud among the forest flowers in maiden solitude;' purple clover, 'the purple democrat, her sturdy little countenance contending with the grass, near kinsman to herself, the bravest of the host;' the columbine, 'flushing deep, bold and careless, yet wondrous light, maddening, gladdening every one with a gypsy beauty full and fine;' cardinal flower, "dark with passion." In the blue-eyed grass, 'two strange sweet eyes, of more than human pleading, so poet-deep, so maiden shy;' asters are 'starry eyes lighting the meadows when asleep.' 'Ariel lies in the cowslip's bell.' The love of the rose and the nightingale was a favorite theme in Eastern poetry, and the 'bee thro'

[1] Friend: V. II, p. 443.

flowery gardens goes, and from the early lily bears a kiss commended to the rose, and like a wary messenger whispers some amorous story in her ear.' Flowers 'like children, bidding reluctant good night, raise their pretty lips and put their nightgowns on to peep and prance again as children caper when they wake.' In a more purely sensuous appeal, columbine is "a running flame," or "a smouldering fire in her dusky bloom;" golden rod, "leaping watchfires," "pure and genuine gold;" the glowing violet implying "that its fragrance communicates to the flower a warm feeling, as if it were slowly burning, and its perfume were rising from it like invisible incense from a censer," while in Shakespeare's familiar lines, the fragrance of violets is in effect like a sweet cadence in music. Again, with the violet 'comes desire for something else than human gain, and encompassed by its breath, immortality, the vital wish of every human heart.' Of their deeper language it is written of them:

> "Your voiceless lips, O flowers are living preachers,
> Each cup a pulpit, every leaf a book,
>
> . . . . . .
>
> My soul would find in flowers of God's ordaining
> Priests, sermons, shrines."

and in Wordsworth's well-known lines:

> "To me the meanest flower that blows can give
> Thoughts that do often lie too deep for tears."

In conclusion, the following general points brought out by the study, as a whole, may be emphasized.

I. The strong natural interest and love towards flowers in most children, heightened significantly in certain respects in adolescent years, and particularly, so far as may be demonstrated by these returns, with girls.

II. The strongly animistic character of the large number of the reactions towards flowers in the way of their being believed or fancied to be possessed of feelings and thoughts like people, the childish belief often persisting more or less strongly as a *feeling* into adult years, and such thoughts expressing themselves also, as was noticeably brought out, in an intense sympathy with flowers on the child's part, and a peculiar sense of kinship with them; with youth, the personification, to a remarkable degree, of flowers in the way of human attributes and traits of character; this anthropomorphism having its parallels in the impressions made by flowers upon the race, as evidenced in folk-lore, the early animism of the child corresponding to the original underlying notions in the race, and a subsequent attitude especially brought out by these returns, growing out of and developed from the former, having also its analogue

in more highly developed race thought, though in the completeness of the likeness felt to human life, and the details expressed, the animism on the child's part, would seem to exceed its older and earlier expression.

III. The unquestionable place and value of flowers in the cultivation of the imagination, the sense of beauty, and the moral nature of the individual; the feelings of kindness and sympathy which they arouse in the child, the predominantly good and noble qualities with which they are endowed, whether knowingly in terms of the fancy or not, and the amount of such feelings which they inspire, making them unconfessedly or acknowledgedly, a power in this latter direction.

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PEDAGOGICAL ARRESTS AND PECULIARITIES.

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A large literature bears witness to the present interest in the subject of arrested development. It deals, however, almost wholly with the feebleminded and otherwise defective or abnormal classes. Very little has been written about the causes which produce changes in the ability or desire of children to make progress in the subjects of the school curriculum. We seem to accept unthinkingly the idea that only a few are elected to survive society's educational attempt; while we view with unconcern her failure to deal effectively with the large majority who occupy the school benches with impatience, till the legal requirements of attendance are satisfied. President Butler's assertion that two out of every three children are ruined by the schools seems justified if we mean that they are fed with the stones of a traditional curriculum till interest dies and the soul shrivels from malnutrition.

PART I.

Dr. William T. Harris,[1] among others, has spoken of the dangers of arrest caused by poor teaching, pointing out that "a severe drill in mechanical habits of memorizing or calculating, any overcultivation of sense-perception in tender years, may so arrest the development of the soul in a mechanical method of thinking as to prevent further growth into spiritual insight."

With a view to investigating the nature and frequency of such arrests, of ascertaining, if possible, by what methods of teaching they are caused and in what subjects of study they are most likely to occur, this study has been undertaken.

I have been collecting from my classes for a number of years cases of pedagogical arrests and peculiarities. The contributors were college and normal students whose ages fall for the most part between twenty and twenty-five years. The method of securing the material has varied. Some classes after a few words of explanation have been asked to give their arrests; others were asked to describe poor methods of teaching to which they had been subjected and to give any evil effects they had

[1] Psychologic Foundations of Education, p. 142.

suffered in consequence; again, classes were asked to give an invoice of their mental peculiarities. Each method has yielded returns, the first being, however, the most fruitful. Its chief defect is that it leaves the way open for the influence of suggestion.

About 700 of these cases in all have been collected. It is not difficult to find them, indeed the majority of most classes find they have some phase of the so-called arrests.

Geography. Those brought on by geographical study appear to be most numerous. This might be predicted from a number of obvious reasons. Perhaps no other subject in the recent past has been so poorly taught. Few teachers even to-day seem to have a clear idea of the true purpose of teaching the subject. Despite the criticism and protests of our foremost educators, "sailor geography" is in evidence in a vast number of schools. The prevalent idea that one must be able to locate every place, whether of consequence or not, on the ground that it may be needed in one's reading, appears responsible for the close memory grind of insignificant details. Over-emphasis on the study of map questions and of map drawing is without doubt the strongest element in the production of the effects characteristic of these arrests. A large majority being of the visual type, extreme concentration on a symbol during the most plastic period of life, habituates to the use of fixed mental images of maps, globes, etc.

One hundred and ten individuals assert that map drawing or map study has produced inability to image places on the earth, a map is called up instead. These cases are so nearly alike that a few samples will show their nature:

Miss R. says, "Another peculiarity I wish to mention is a more serious case and one which I almost daily deplore, and which might have been avoided by a little forethought on the part of my teachers, or at least, could have been made less evil in its results. As a child in the elementary grades I spent three or four years studying the geography of the United States with the aid of a large and, as I remember it, beautifully colored map. I can see it yet. Day after day it did service as an aid to our text books and day after day, week after week, month after month and year after year we followed the teacher's pointer or used it ourselves in pointing out states, rivers, etc. Not the slightest effort was made on the part of any of the teachers during this period to give us any other mental pictures concerning our country than such as could be furnished by this map. In consequence I still think of all states as little patches of green, red or yellow, as the case may be. That result I do not regret so sorely for it is a common thing. But worse than all the map was hung during all those years upon the south wall of the school room. This reversed all the directions and I still think of Washington State, for instance, as being southeast of here, Florida as being northwest, etc. It would be almost impossible for any one who has not had a similar experience to imagine how very strong this association is. I have no hope of its ever being completely eradicated and nothing but extensive travel, I believe, will ever serve to weaken it."

Another says in part: "At eight years of age I entered a class in M's geography, a text book with supplementary atlas. Several years were spent upon map questions; to-day the mention of even a familiar place suggests a map rather than a mental picture of a place.

Abuse of map drawing appears more vicious than map study. The motor element is here a factor and involves a greater concentration of attention.

"We drew the coast line so often, especially the New England coast, that each indentation as it appeared on the map stands out as vividly as it did then, the result is that I never think of those bays as bodies of water but as small blue spots on the map."

"Mountains were, until I had seen them, just perfectly round, smooth elevations of land, resembling the shape of a hay stack."

"When I began the study of geography I had the misfortune to be under the instruction of a teacher whose chief hobby was map drawing. We were required to draw each group of states three times; once before we studied about them, then, again after we had finished the study of a group and finally to draw the map on the board from memory. These maps became firmly fixed in my memory, and I find it impossible to think of the states or bodies of water in any other way than as they appeared on those maps. For example, whenever I hear the name Erie, I see a little spot about an inch and a half long and half an inch wide colored light blue and lying just above the map of Penn."

Another who had to draw maps from memory says, "In consequence when I now hear a country or a place mentioned I can see the map of the country and the place as distinctly as though they were before me and never think of them in any other way."

All degrees of visualization are found. Some simply report seeing the outline of the map; many others have vivid pictures of the map colored as in book or as drawn with crayons. Few will question the value of map drawing, the criticism must be directed to the extent to which it is carried. Where the child is required to draw and redraw the map from memory it simply amounts to a premium on visual memory and confirms him in the habit of relying upon it.

A curious thing about this whole line of peculiarities, as in the case of number forms, is that the possessor rarely becomes conscious of them or he takes it for granted that every one has them. Some students assert that they suffer no inconvenience from them; one even goes so far as to say that it is a help to him and that he does n't know what he would do in geography if he could n't call up a map, but this is evidently because it is all he has and the effort to get an image of anything else is difficult.

On the whole it seems justifiable to call the peculiarity mentioned an arrest and an injury, to the extent at least that the mind remains satisfied with the visual image of a mere symbol and makes no effort to image the real world of relations. This is often the tragedy of it. One student who has arrests in geography, arithmetic and grammar, and whose intellectual life is on a low level, says that her peculiarities are

no hindrance to her. On the other hand some of my best psychological students have these fixed mental pictures in some one or more subjects. Some who are conscious of the trait state that effort aids somewhat in removing it. A number also assert that travel has proved the best means of correction. This is in line with my own experience. For a long time I visualized only those places I had seen. The map served for all the rest and still does so in my unthinking moments. All this suggests the value of excursions and of outdoor study for beginners in geography—to furnish material for the imagination. More care should be taken to avoid making maps and globes objects to be studied for their own sakes. Attention also must be given to making the transition from them to the reality for which they stand. The number of those who think of places only in their relations to each other on the map will then be much smaller.

While undue drill seems to cause the peculiarities, yet in many cases geographical knowledge is misconceived from lack of proper explanation at the time. Here are some cases of early associations remaining permanent for this reason.

"When I think of Penn. I always see it within a map of Kansas, for my earliest impression is of seeing it so represented for comparison as to size."

One imagines "the North Pole is a place where a small pole two inches in diameter and ten feet high is sticking from the earth."

Another says "My first geography teacher explained that the earth was a globe floating in the air with a pole pointing toward the north and another toward the south. In thinking of the north pole I see it on a schoolroom globe floating in the air.".

"When thinking of Texas I see the surface as a tier of steps. This was the first impression I received of the meaning of the word "Steppes."

Such cases as the following may bear on the question of the origin of such terms as "Up North" and "Down South."

"I used to think that rivers never could flow north because that would be flowing up hill as north was always up on the map." Another who makes the same statement adds "this may have been helped by the fact that my home was on a southerly slope and I had never been north of the divide."

One thinks of "the boundary lines as being high fences, usually wire fences but in places stone. The fence around Kansas is the highest." Again, "I thought that there was a well travelled road around each state for a boundary. This was probably because I lived within half a mile of such a state line." Another: "I think of countries and states as being separated by a line and expect the country to look different upon crossing the line."

Another evil arises from the ignorant or careless placing of maps. Sixty-five report having to fight for a proper conception of directions on the earth. The needof correct orientation is a real one to many people, and my subjects speak in many cases of the troubled state of mind when this is lacking. Every one knows the sense of discomfort experienced in being "turned

around" on coming into a new place. It is a sense of bewilderment at times amounting to positive pain. The explanation seems to lie in man's instinctive desire to know his environment. In the primitive state it was a matter of life and death. A similar uncomfortable feeling is experienced by many when thinking of places on the earth. They testify to an effort that must be made each time in thinking geographical directions. The trouble in every case appears due to the mistake of hanging the map on other than the north wall of the schoolroom. Here is one of the cases.

"My sense of direction is faulty. When I began to study the United States from a map, it was in school where the seats faced the south and the large map hung on the south wall. As a result of this my first thought of the New England States, for instance, places them to the southwest as that would correspond to their place on the map. This is true even yet, though by an effort I can avoid this since I know where they are. The same is true of all other places. In fact I must constantly readjust my location of places by a second thought growing out of what I know to be true."

As showing the power of early associations it is worth noting that many who are not at a loss as to orientation still go back as a matter of course to a map on a certain wall of a schoolroom to get their directions.

They are like this:—"Whenever I want to locate a town in Kansas, I must see the map of Kansas open on my desk in the old schoolhouse at home. My desk faced the north and until I see the book open on that desk I cannot locate a city. As I think of the desk I invariably face the north. This did not strike me as peculiar for I always did it."

A peculiarity surprisingly common, though only indirectly geographical, is the difficulty of distinguishing the right and left hands. Thinking of right and left in connection with a certain schoolroom where it was first learned is the most common; many go back to some other association of childhood by which they settle the question. Some of these ways of determining the question are as follows:

"For years I had to imagine myself whittling to determine which was the right and left hand." "I cannot think through the process by which I learned to distinguish my right and left hands so readily as I can that of direction. It is necessary for me to mentally place myself back in the room where I learned directions, face north, think that the sun rises in the east and then mentally touch my left hand, saying to myself 'this is my left hand.'" "By thinking of the hand which used to have so many warts on it as the right." "By imagining myself sitting at the piano." "Used to pick up something." "Had habit of rubbing ring on left hand with thumb." "Am equally right and left handed and have to place myself in the position in which I learned the difference between them." "Teacher told me as a child that my right hand was the one next my seat when standing in the aisle, and to this day I cannot tell without taking a small portion of time to bring up the old association." "By thinking on which side I used to have a pocket in my dress." "Think of myself writing." "By

stopping to see which hand I use in throwing anything." "Clench my hands tightly; the strongest grip tells me which is the right." "Look at broken finger in right hand."

Arithmetical Peculiarities. Ever since General Walker called attention to school conditions in Boston the idea has been gaining ground that we are insisting on too much arithmetic. Prof. Patrick and others have called attention to the fact that number work is given too early in our schools. President Eliot also has shown that the acquisitions of young children are relatively too insignificant in amount to warrant subjecting them to the grind usual to the primary years. The whole school system is permeated with the idea that a knowledge of number is vital for success in life. Hence we find it occupying the place of honor through the eight grades of the city school and almost the sole subject of study for many in the rural schools. No one will dispute in the least the necessity of having the essentials of arithmetic well taught at the right time. A certain additional value, indeed, may be admitted to come from the solving of "numerical conundrums," in the line of giving the idea of the ability to achieve. In yielding to the curious fascination of puzzle solving, however, this quality of persistence may be too dearly bought. One student says that he worked a year on one problem, and another states that he never found a problem that he could not solve. Given this state of concentration, a meager curriculum, and years spent in going over and over the same ground with the mind occupied with quantitative ideas, and it appears easy to account for the peculiarities found in the cases.

Seemingly the most serious phase of number arrest is the counting habit, called arithmomania when so pronounced as to become pathological. Classification of cases showed forty of these of varying intensity. Later inquiry, however, reveals the fact that several counters are likely to be found in every large class. The trait really seems to be a misfortune, impeding or hindering progress in other directions; numerical relations and quantitative ideas fill the mind to the exclusion of things causal and qualitative. It is not necessarily the result of poor teaching except the poor teaching of giving mathematics too early or too intensively.

"From my mathematical training I am under a constant nervous strain in my desire to enumerate everything I see. In our school more attention was given to arithmetic than to any other study. We almost thought in numbers and ever since then I have had a desire to count the telegraph poles, the boards in the sidewalk and the trees along the way."

"Mathematics was not difficult for me and I liked it. Much of my time in my early school days was spent in working problems and the tendency to see number in everything soon became evident. When I walked I would count my steps; when I rode in a buggy or car I would

count the fence posts or telegraph poles passed; when I went fishing and the fish did not bite I would think 'now if I don't get a bite before I count to fifty I will see if the bait is gone,' etc. Later in the high school I had a great liking for geometry and spent so much time solving original problems and in drawing triangles, rectangles, etc., that everything in nature would form into some of these shapes. My tendency to do this is decreasing but yet in most cases I will notice the shape of an object or the form of a group before color, size, etc."

I quote the following account of a precocious boy by one who knows him to exhibit this tendency in its extreme form:

"O. E., aged eight, belonging to a large family of brothers and sisters, exceptionally dull in school was subject from infancy to epilepsy, attended by violent convulsions and final stupor, awaking with no knowledge of what had taken place. His mind ran to mathematics, in which he would make countless examples relating to any objects with which he was familiar. He would count, for example, the number of feet in the logs in the wood pile, the number of fence posts in the sections, how big a wood pile these would make, how many fence posts the stove wood in the pile would make, etc. By the doctor's advice he was to be kept from making these calculations, but his mind was so active that this was impossible. He was continually teasing his parents with: "Give me some numbers to add," or "I can tell you how many feet in," etc. "When I last knew him five years ago there seemed to be little hope of his ever becoming better without special medical treatment, and each of his violent attacks weakened him for days following."

Lindley and Partridge[1] in their study of Mental Automatisms, say that the most probable foundation of the counting impulse is the susceptibility to rhythm so strong in childhood. "A succession of impressions starts automatisms and seems to summate these responses and to induce a sympathetic vibration in the whole organism." Such cases as the following seem to bear out this claim:

"I have a habit of counting by the alternate contraction and relaxation of the muscles of my legs and arms. I often count my steps when I walk and spell words to myself as I alternately contract and relax the muscles as before mentioned. I have counted that row of electric lights on the arch over the front of the stage in the assembly room hundreds of times and also the plaster of paris panels of which each circle of the arch is composed."

Another inveterate counter says that she has a feeling of unpleasantness if the number of objects counted ends in an odd number, perhaps from leaving the rhythm incomplete. It may, however, be from other causes, as a preference for even numbers. Other elements are involved, however, as is seen in this one: "If I succeed in counting all these in a certain distance the number is never remembered, but if I lose count before finishing there is a feeling of unpleasantness." Large numbers

[1] Lindley and Partridge: Some Mental Automatisms, *Ped. Sem.*, Vol. V, pp. 41-60.

carry forward in life the use of various devices acquired when beginning number work. The habit of counting on the fingers is common. In my returns the making of dots with the pencil or counting by taps of the finger occurs even more frequently.

"In arithmetic I became addicted to the habit of adding on my fingers. Even now, especially if I become a little confused, I find it easier to revert to the old method."

"I do not remember of ever knowing anything of combinations. To find out, for instance, what two and two were I always had to count, until I learned it by myself. This arrest has been partly overcome by my high-school work and also by my own teaching, but I often find it creeping into my work especially, if I am tired, to confuse and retard me."

A teacher of thirty says', 'Instead of counting on my fingers I made dots; for three I made a vertical row of three dots, for four two rows of two; for six I counted the three twice and for eight the four twice, etc. I kept up that method until I was ashamed and made myself do the work mentally. Sometimes now I find myself counting in that old way before I realize what I am doing."

These little mental habits are truly arrests. Where the slow operation of counting is persisted in it interferes with the proper acquisition of the power required to think combinations. Many peculiar mental automatisms result from the devices of early number work. A few of these may be of interest: One girl who was taught to add and subtract by the aid of an abacus says, "for several years it was impossible for me to get away from those red and green balls, and to this day I scarcely ever add a column without recalling them unconsciously."

Another learned the digits by fitting together sliced birds and now always sees them in the old connection. Some write at one side the figure to be carried or make the corresponding number of marks. The "borrow and pay back" method of subtraction often persists through the years. One student in adding counts on to the number the prongs of the 3 or 4. When paying close attention to a subject another finds herself running up the scale of number by twos, threes or tens. Another writes 1234 continually. Another writes dollar signs by the hundreds. Instead of the different digits some visualize corresponding groups of dots. One says "I always see the picture of the number on my fingers. When recalling a number, as 352 for example, I see the first three fingers then the whole hand and then the first two." Some see the problem being worked out on a mental blackboard. Others note the set of mind given them by years of working for the answer, also the effect of using a rule not understood. Students who learned the multiplication table in concert report being compelled to start at the beginning and go to the combination desired. It is common for certain combinations in the table to persist in being difficult to think. Too much written number

work is harmful, as it habituates the pupil to the use of pencil and paper for even the simplest problems.

Many cannot get the product of two numbers until they have a mental image of it in the form given on the blackboard in the schoolroom where they first learned the multiplication table. In connection with these may be mentioned the number forms of which many were found. While they exhibit little that is new a few cases strikingly illustrate how such forms arise. They serve also to show the close connection between this class of phenomena and the other peculiarities mentioned. The following is the simplest and with its variations the most common number form: "When taught the numbers from one to one hundred they were placed on the board in a horizontal line, the first line being from one to twenty, just below a line containing the numbers from twenty-one to forty and in the next from forty-one to sixty, etc. Now I see the numbers in just those lines."

The teacher who used the method mentioned below evidently had the common clock faced form and succeeded in communicating it to her pupils. "A circle was placed on the blackboard and the figures always occupied the same positions on it. A long time elapsed before I could multiply without going back to the beginning and even now when I think of 6 x 7 etc. there comes to my mind a picture of that circle and the exact place that the figures occupied." One of the many who have images of numbers as they appear on a mental blackboard says, "When I learned the numbers I never saw them in any other form. I did not know then that they could be."

The apperceptive bent given the mental reactions by continued drill in a subject is well illustrated in the case of a six-year-old child known to me who was being pushed in his number work by a teacher desiring his promotion. "Mamma," he remarked one day, "I am getting so that when I ride or walk in the street I see the combinations in the windows of the houses we pass." Another time, seeing the velvet trimmings on a little girl's clothes, he exclaimed, "Myrtle has combinations of five on her cloak."

The close relation between number forms and the other forms described in these pages has been pointed out. In both the curious products of mental activity other than conscious are seen. The whole subject seems to resolve itself into a study of the bases of mental automatisms, and furnishes much material which a believer in double personality would charge to the credit of a subliminal self, but which could doubtless be explained as the tendency of the mind to continue to react along the line of certain subtle associations. However, when a student sees what he reads or hears assuming the diagrammed

form, when he sees his problems being worked out before him on a mental blackboard, or in the common occurrence of dreaming out a problem, and especially in such instances as those mentioned below where one seems to be a passive observer of a series of changes that appear to come of themselves, the belief in a kind of psychical activity outside of ordinary consciousness is easily formed. A good instance of this kind will be found in the account of the peculiar and very intricate games or word contests which occupied the mind of Mr. Arthur Clark from the age of five to manhood. (Reported in Vol. XIII, *Am. Jour. Psy.*). He insisted that the forms of these contests, which appeared at different times of his life, grew in his mind without conscious attention or formulation, and the groups seemed to go through their successive changes when in operation as mechanically as the changes produced by a moving picture machine. "A word in process of change did not take its ultimate form at one move but each step was separate and distinct though very rapid, as the final result seemed almost instantaneous. After the changes began my mind seemed to be passive and I was merely an onlooker and not a conscious director." A similar trait appears in another of my students in regard to number.

"When in any manner the idea of number enters my mind there is always aroused a mental image of the ten digits in a horizontal row. I hear 35 for example: As the mental process is going on this row of digits appears about six inches before my eyes as shadowy, transparent, spiritual, active things; then the 3 seems to step out of the row and come nearer, then the 5 comes from its place and stops by the side of the 3 and I have the image 35. Suppose I want to write a number, say 358: from the row of digits the 3 comes to the point of my pen, then the 5 followed by the 8, each in the order used, but when I think the number the digits fall into their places simultaneously.

When a figure moves out of its place in the row as mentioned, it does not leave a vacancy, as its place is filled by another of that order at once. I do not see these recruits take their places. They simply appear to be there in inexhaustible supply.

It is an enjoyable experiment for me to introspect the mental process while performing mathematical operations. The digits move about to their places, the row, however, always remaining full, a digit coming from here another from there, each moving to its place as if it had a mind of its own and knew what to do."

Language. Strong criticism of the language work in the schools is often made on the ground that little power in its use as a tool is developed. Language is necessary to profitable thinking, and it is also the indispensable means of recording what man has thought and done in the past. It is one of the strongest bonds of union in social life and the instinct to express himself will carry the child far toward its acquisition. He should not be made too language conscious for the first three or four years of his school course but by unconscious imitation

in oral story and nature work should be brought to the use of the correct language forms. Language as a school subject in the early grades, is a means and not an end in itself. The study of formal grammar is unsuitable for these years and the so-called language-lessons are often no better. Children dislike the "picking apart" process and the abstractions of word-relation. By such exercises the mind is left so clogged with technical, and to the child, unmeaning rules, the parsing tendency, and various automatisms induced by too much diagramming, as to prevent attention to the content side. When his stage of development warrants taking the subject to advantage, too often he has acquired a distaste for it and for good literature also; this arrests progress, and perhaps one of the most serious arrests is that which comes from the death of an interest.

While not so many arrests were reported in this subject, its harmfulness was more often deplored.

Diagramming, the lazy teacher's method of passing the time, brings more surely than any other the result that content gives way to form. If anything so artificial can be at all justified it must be for only a brief period at the fit time. In general this, and the parsing process also, is begun too soon and prolonged to too great length. I quote cases here to emphasize the poor teaching which focalizes energy on words and neglects the essential thing for which they stand.

As a result of her study of "The Vision of Sir Launfal," "Idyls of the King," etc., one says "I am always picturing the words on red lines of a diagram and not getting the thought of the poem."

"I often find myself repeating other peoples' expressions to see if they are correct. I see the words as subject, predicate, etc., divided off by lines as we learned to do in diagramming."

"For a long time sentences were diagrammed roughly, then copied very carefully into nice note books. The lines were made with red ink. In studying a difficult sentence now I mentally diagram it and sometimes use the red lines."

"When I speak, sentences often arrange themselves on a diagram, that is I diagram the sentence on a form."

"When I speak I see the words in print before me. Sometimes I see the sentences diagrammed, at other times I pick out the figures of speech instead of giving my thought to what is said."

Analysis, parsing and drill in sentence forms generally produce the same result as diagramming: absorption in the structure and too often dislike for literary study.

"The thought of a selection often had to give way to the analysis. I loved to diagram and analyze, and this, with my class drill, caused me always to be picking out subject and predicate or clause. In this way I lost the thought in paying undue attention to the construction of the sentence."

"When studying Ruskin's essays we were made to diagram and pay such close attention to the syntax that the literary merit was destroyed. I have never had the interest in Ruskin's essays since that I should have."

A common confession is that of directing attention to a speaker only to discover awkward expressions and grammatical errors. Many say that a conscious effort is needed to prevent dwelling on mispronunciations and other such mistakes. This is due in large part to the teaching of those who have become critical of pronunciation and sentence structure, or who try to measure literary expression from a grammatical standpoint.

"I never hear any one speak without noting the words used and often how awkward they sound, also the grammatical errors. I also find myself thinking how much better such and such a word would sound in a given place."

"The first thing I notice and judge a person by is his language. Correct pronunciation is soothing to me. Errors in pronunciation lower a person in my estimation. For instance, I once heard a lecture on Savonarola which was really fine, but the lecturer's pronunciation of Savonarola worried me."

The failure of some to develop ability in oral expression is blamed to teachers who had a mania for written work. They recall Dr. Hall's charge of teachers conducting correspondence classes with the pupils before them. So, failure in composition is charged to teachers who gave abstract subjects on which pupils had nothing to say and thus fostered in them the idea that composition was not a possibility for them; and surely this idea of incapacity is a real arrest.

Miscellaneous. In history, the peculiarities mentioned are such as have come from the word for word memory method of study so widely prevalent. The facts which are remembered are recalled through verbal images localized on a certain part of a page and in a certain part of the book. The following case is typical:

"In history I never recall the accounts of the Thirteen Colonies without seeing the pages where they occurred in Swinton's History and the pictures of the state seals at the beginning of the topics."

Other arrests for which the public school teacher is not so directly culpable may be simply enumerated. Failure to learn music because there was no early cultivation of the rhythmic sense when at its flood, typified by the account of the girl who had no music in the family and learned no tunes. At seventeen she could not learn even simple tunes.

Some speak of being unable to conceive of God and religion except in the incongruous forms of early childhood. This is a serious pedagogic arrest as well as arraignment of the current religious teaching of the Sunday School and home.

A great number bewail what may be called the "social arrest." This takes the form of timidity, bashfulness, lack of ease in the presence of others, especially the other sex, lack of self-confidence and of ability to make an oral recitation, etc.

In ending the list I would name as the most serious of all the faults of the school its failure to arouse in the child the idea that he can do things, in other words, the power of initiative. In the study of the causes of this failure the facts given in these pages have a bearing.

Pedagogists will differ regarding the amount of importance to be given the peculiarities mentioned in this article. If, as it seems to me, they do interfere with the proper development of later mental powers they are to be guarded against. The causes of most of them may be found in the teacher's ignorance or disregard of the nascent periods of the child. Over-zealous drilling to secure thoroughness in any period fixes the child's mode of thinking in that level of development. Long continued use of the object method may interfere with the growth of memory and the imagination. So, too intensive drill in memory work inclines the mind to set forms of imaging, and prevents its rise to the higher stage of critical reflection. The testimony of those reporting arrests shows this. Through all the cases can be seen running the great law of economy:—In geography a map is called up, in grammar a diagram, etc., for the mind finds it easier to react in the forms habit has given.

A large proportion of these arrests are the result of a diminution of interest in the work and a lack of that high enthusiasm for study essential to success. This, however, is in large part simply another aspect of the question of drill, for the consequence of repetition is inevitably loss of interest. Youth demands change, and dwelling too long on a subject brings fatigue to an individual whose nervous system is on a high tension. Drill, then, is admissible only where the interest continues. Swift[1] has shown experimentally that "it is not mere practice but successful practice that counts," and that "school work continued to the point of fatigue is disastrous." If this principle were applied it would effect almost a revolution in many schools.

PART II.

The Case of Bright Children.

I introduce here for their incidental bearing on school arrests notes on some so-called precocious children. For several years I have been asking teachers and our students who have been teachers, for accounts of extraordinarily bright children known to them. My collection has now grown to 52 cases pretty well distributed over the State of Kansas with a few from outside.

These children are not all of the prodigy type. Some are

[1] *Am. Jour. Psy.*, Vol. XIV, p. 223.

apparently simply the brightest the observers have known judged by the teacher's standard of ability to learn the school subjects. The data do not always cover all the points desired. The records are often incomplete by reason of the temporary tenure of the teacher's position. Some of the cases were observed through a long series of years, others but for a year or two. However, a majority of them are sufficiently interesting to warrant printing, but even in summarized form only a few can be given.

Of the 52 cases 36 are boys, a preponderance probably accidental but at least suggesting a line of inquiry for students of sex differences.

In only 8 cases is the child said to be above the average in ability in all lines of study. Two cases summarized will show their nature.

Boy. Could read at two and use correctly any words he heard others use, at three read the Third Reader and almost anything in the newspaper and could tell it. At two used to gather the children of the neighborhood together and tell them stories. Throughout his school course was good in all lines and is now, at fifteen, a junior in college.

Boy. At three, because of his insistent teasing, was allowed to enter school; was intensely interested in all the school work and was soon ahead of the average student of six or seven; learned easily in all lines of work. This continued for three years, then he lost interest and in the ten years since has had no interest in school work which also has seemed difficult to him.

In most cases, however, where the nature of the ability is mentioned it is special, and in over 50 per cent. of the cases is an exhibition of memory. This is shown along the line of reading history and literature, committing lessons to memory and learning spelling.

Girl. Was in school at five. Could learn anything requiring memory; learned and recited long pieces of literature that would be difficult for a 14-year-old. Impossible to teach her number though she tried hard to understand it. When about eight years old she seemed to lose all power of learning, could n't memorize and forgot what she had learned, though she continued to work hard. She is a very nervous child, small and delicate and with a speech defect.

Boy. Eleven years old. Not good in mathematics. Has a wonderful memory for history, learns long lessons word for word, dates and all and remembers them; not so good in other branches. Seems like a little old man both in speech and appearance.

Boy. Ten years old when observed. Had as much general information as most men of twenty-five. Had the power of glancing over a page and telling everything on it. Could read over a history and then tell everything in it, even getting the dates right. He was a sickly boy and when last heard of his parents were talking of taking him out of school.

Six are said to be good in mathematics and to like it. Ten disliked this subject or were pronounced incapable of acquiring

it. These were all found in the group of memorizers mentioned above. Two had special ability in music and two in drawing. These were poor in all the school work except one of the latter who was fair in mathematics and was the only one who did not flatten out later. He is succeeding as an architect.

The most striking fact in the case of these children is the large number who fail to carry out the promise of their early childhood. They are the pick of thousands of children who have come under the observation of these teachers, yet in over 40 per cent. of them retardation or complete arrest of progress is mentioned.

Boy. Began school before he was four, at five was in the Third Reader, knew the multiplication table and was classed with pupils three years older than himself. In his third year in school he did not make any progress nor for the two years following. He then began to learn slowly, but had lost all his interest in school by that time. He is now a young man of very ordinary mental equipment.

Boy. Came to school at four years of age. Had remarkable power of imagination and a splendid memory. Learned to read rapidly and was quite good in numbers. The second year he seemed no farther advanced than at first, had forgotten all he learned and had little interest in the work. He was nervous, small and delicate. Father drinks and mother not strong mentally nor physically.

Boy. First observed in the third grade, much younger than the average of the class. Exceedingly bright in all his work and a great reader. Went through the grades rapidly, skipping a class every year. On the grounds was pugnacious and overbearing. For reasons not known the evil tendencies later gained the ascendency; he became one of the bad boys of the school and town and was sent as an incorrigible to the Industrial School.

Boy. From five to seven was very bright. Had a good memory and recited exceedingly well. About eight stagnation set in and he did not seem able to keep up with his class at all. He was here lost sight of.

Boy. Showed himself on entering school far brighter than his fellows, passed into the third grade the first year. During second year "he became swelled up over his advancement and would not associate with other children. He reached his height in these first two years, passing over five grades. He then spent three years in one grade, quit school and became a street loafer. Two brothers are mentally defective.

It is not at all likely that the 40 per cent. in which arrest is mentioned, cover all who fail to maintain their initial rate of progress. In a large number the observers lost sight of the case reported while he was still in the bright stage. Certainly a considerable number of these should be added to the list.

My data are not sufficient in all cases to enable me to state the causes of these arrests. In many the reasons appear. In part they are those furnished by the school system and by the conditions of the home life. In addition must be mentioned certain deep-seated causes that always raise the question of the normality of precocity and genius. The debate is not yet at an end, nor has Lombroso been driven from the field. It seems

to me that the precocious are of two classes: first, those possessing unusual ability and a long period of plasticity—the Gladstone type; second, the flash-in-the-pan-type—bright in the morning of life, but becoming stupid or worse later—reminding one of the little apple tree, too young for normal bearing, which, becoming infested with borers, blooms, sets fruit and dies untimely.

In these 52 cases of bright children 54 per cent. are frail, weak, delicate, are peculiar or abnormal, have St. Vitus Dance or epilepsy, become insane, or have insanity or some form of abnormality in the family; this is a much larger proportion than is found among school children in general. A few cases, much abbreviated, follow.

Boy. At two and a half years could read, at six was in the fourth grade. Observer states that he could converse on any subject. Always used large words. Hates mathematics and is dull in it. Has a wonderful memory. It is impossible to get him to play, is slow in his movements, does n't care for the company of children, prefers to converse with older people. He has always been delicate and now, at nine, is threatened with St. Vitus Dance.

Boy. Very bright at twelve in arithmetic and geography but dull in other lines. He is frail and subject to spasms.

Girl. Exceedingly bright as a child, She was required by her stepmother to get her lessons in summer as well as in winter, spring and fall. Graduated at the State University one of the youngest in her class and shortly thereafter became insane. Her father was a drunkard and her mother died in an insane asylum.

Girl. At six months could say several words, at one year could carry a simple tune. Was much further advanced in her studies than other children of her age until her tenth year when she had St. Vitus Dance. Since then she has not been brilliant and barely holds her own in her work.

Boy. Only son of a minister. As a young boy was exceedingly bright, was pushed and hurried by his sisters who were school teachers. After making remarkable progress his mind suddenly gave way in his early teens. He was weak physically and subject to epileptic fits.

In the case of those who are plainly abnormal, nothing further need be said regarding the cause of arrest. As to the larger number of the remainder, however, the cause is not so obvious. Two periods of arrest seemed most prominent in the cases. The first from seven to nine, the other at about the age of adolescence. The explanation for a large number of the first is, perhaps, found in the fact that they began at three, four or five years of age to do work unwarranted at that stage of brain development. Possessing strong memories and being pushed and stimulated, a fact stated in a number of the cases, by relatives or by teachers, who made "pets" of them, they maintain their reputation for two to three years when their immature brain cells seem to lose their early power of response and further development is impaired.

In the second group one element in the explanation of the

stagnation which characterizes them is probably the result of continuing elementary methods after the passion for change comes which heralds approaching adolescence. A good memorizer too often comes to depend in his recitation upon his ability to repeat words; no careful habits of study are formed and when the more serious subjects of the high school or later grades, which require some exercise of logical power, arrive to displace the primary subjects, he is incapable of making the transition. Many other causes, of course, come in, especially among the rank and file, to make the school distasteful at this time.

DYNAMIC BIOLOGY IN THE COLLEGE COURSE.

By C. F. Hodge, Clark University.

II.

Huxley cast the mould of our present course in biology about 1870. At that time his work was the stroke of a master genius and marked an epoch in modern biological instruction. In symmetry and perfection the course is a crystal of logic, and I do not see how any one who followed it, either under the great master himself or under his co-author, Martin, could ever fail in appreciation of its value or cease to regard this course with a certain degree of reverence. Still, as one who took the course with Martin, I feel that the time has come for a complete metamorphosis and moult. If I may be permitted to carry out the figure a little farther, it seems to me that the Huxley-Martin course represents a chrysalis stage in the development of the science—a time of ideal internal perfecting—and that it is to be succeeded by the adult stage in which the biologist must take his place as an active power in the community.

Transformations and moultings are difficult processes at best. The problem involved in the present instance is to save all that is best in the past and make the necessary adjustments to the demands of the present. That radical changes are imperative, is manifest on all sides. "Do you still use Huxley and Martin in the biological course at the Hopkins?" I recently asked the professor in charge. "No," he said, "we have not been able to work with that for a number of years. We use ———'s book, but it is not adapted to our course, and there is no book that is." Within a year the entire "biological" department in the high school of a progressive New England city was thrown out, ostensibly, on account of lack of room, but really, I think, because it had degenerated into technical, college botany and zoölogy. The recent action of the Regents of the State of New York, in discontinuing the old courses in botany and zoölogy in the secondary schools, putting *biology* in their place, is another case in point. In adapting the work to the required three years' basis at Clark, it was proposed to omit "freshman biology" altogether "as not of much account anyway." After discussing the matter, however, President Wright finally said: "Well, if we can have a new deal in freshman biology, there is not a subject I would rather have in the curriculum."

I propose to describe in some detail this "new deal" as it has taken form during the past three years. Before doing this, however, we shall need to follow the course of biological instruction from Huxley's time down to the present. Some may be inclined to think that there have been a number of "moults" already, but it seems to me that these are all to be classified under internal movements of resorption and inversion in preparation for the final change.

Huxley defined science as "trained and organized common sense." Before that, science was "classified and arranged knowledge." Before Huxley inaugurated the biological epoch, we had botany and zoölogy as two separate museums with the specimens classified, arranged and named. They were all dead and there was little common sense in either their classification, arrangement or naming. There were no organizing or vitalizing principles that united the two museums. Since the handling and study of dead animals and plants is a disagreeable task at best, most, if not all, of our courses in botany and zoölogy were done by the text-book method. Our heritage from this old regime is still in evidence in the fact that in some institutions the botanists and zoölogists are divided into not only distinct but jealous camps. "What a chance you have for these experiments," I remarked to a zoölogist friend in a large university, "with a greenhouse of your own." "You are greatly mistaken," he replied, "that greenhouse belongs to the botanical department. They have nothing in it, but a zoölogist does n't dare show his head inside." And then I made the mental note that there was very little in his magnificent aquaria and that probably no botanist need apply. In another instance a gall in a plant was sent to the botanist of a college, with a request for information. The botanist promptly sent it over to the zoölogical department as a case of insect work. The zoölogist reported "no insects present, probably a fungus;" and back it went to the botanist. I understand it finally dropped between the departments.

Biology is defined as the study of living things in their widest relations. It is inherently dynamic. It deals with the forces which act and interact upon organisms and which they themselves exert. I have emphasized the close relation which exists between dynamic biology and evolution in the preceding paper; and, while the science was christened by Lamark and Trivarinus in 1802, as a reincarnation of the older evolutionary thought of the Greeks, and as an expression of the inadequate attempts toward a consistent philosophy of evolution of their time, it was really born in the evolutionary work of Huxley. For him the biological view was a logical neces-

sity. He could no longer be either a botanist or a zoölogist. As he says in the preface to his first edition:

"Very soon after I began to teach Natural History, or what we now call Biology, at the Royal School of Mines, some twenty years ago, I arrived at the conviction that the study of living bodies is really one discipline, which is divided into Botany and Zoölogy simply as a matter of convenience; and that the scientific zoölogist should no more be ignorant of the fundamental phenomena of vegetable life, than the scientific Botanist of those of animal existence."

The old botany and zoölogy could give us only at best an imperfect philosophy of plants and animals. What we need is a philosophy of life itself.

Huxley's series of types is a list to conjure by. I name them in the order in which they occur in his book: Yeast, Protococcus, Amœba, bacteria,—then up the plant series with—Moulds, Stoneworts, Ferns, flowering plants—then back to the protozoa and up the animal side with—Vorticella, Hydra, Fresh-water Mussel, Crayfish, Frog. For the mature student, this logical sequence from the simple to the complex on the side of both animals and plants could leave little to be desired. Every one who followed this course in the laboratory came out by logical necessity an evolutionist and no teaching of the dogma was necessary. In fact this was tactfully held in abeyance, each member of the class being allowed to draw his own conclusions from the facts themselves. I well remember on completing this course in the Johns Hopkins our class had to wait upon Dr. Martin by special committee with the request that he give some additional lectures on the doctrine of evolution itself.

I should add, perhaps, that the course was filled out by a number of types, like Spirogyra, Vaucheria and Polytrichum, Earthworm, Perch, Turtle, Pigeon and Rat; and the work was concluded with the embryology of the chick. This gathered up all the loose ends and tied them fast. As given by Dr. Martin himself, I still look back upon it as the most ideal course I ever had, and in it we saw in microcosm a vision of the evolutionary process,—a form actually weaving its organization from a single cell, a protozoan, to a vertebrate, all in three days time.

I must also add that coming to this course as a mature postgraduate student my intense enjoyment of it has left me a confirmed stickler for the logical order. As a pure discipline in inductive reasoning nothing can supplant it. Still with immature students I realize that to begin with the Protozoa and Protophyta, the one-celled animals and plants, is really casting pearls before newly hatched chicks. They need gravel first and unless they have it, this most ideal and suggestive part of

the whole course is passed over before they are able to think what it means and they may be biologically crippled in consequence. How I avoid this in my present course will be cleared up a little later. Martin clung to the logical order to the end, but Huxley, after a few years' trial, changed it completely to what we may call a more natural or psychological order.

The reader should at this point refer to Huxley's preface to his "Revised Edition" (it should be read in full) in which he says:

"But besides these changes, the reader who compares the two editions will observe that the order in which the subjects are presented is completely changed. In the first edition the lowest forms of life were first dealt with; the series of plants followed in ascending order; and then the series of animals, from the Bell animalcule upwards to the Frog.

"No doubt there is much to be said for the principle of this arrangement, which leads the student from the study of simple to that of complex phenomena; but the experience of the Lecture room and the Laboratory taught me that philosophical as it might be in the theory, it had defects in practice.

. . . . . .

"After two or three years' trial of this road from the simple to the complex, I became so thoroughly convinced that the way from the known to the unknown was easier for students, that I reversed my course, and began with such animals as a Rabbit or a Frog, about which everybody knows something, while their anatomy and physiology is illustrated by innumerable analogies with those of our own bodies."

Martin never admitted the cogency of this reasoning, but maintained that since we must descend to the cellular elements in order to an intelligent understanding of physiological process and anatomical organization, and since the bulk of the work dealt with minute and technical anatomical details, this order really plunged the student into not only one "unknown" but into a "most bewildering and complicated maze of unknowns." The first edition devotes 108 pages to the Frog, the Revised, 172, and other topics are likewise amplified, so that from a trim little book of 266 pages, the Revised Edition has grown to 498 pages. When Martin saw the Revised Edition, I heard him say in disgust: "It is a clear case of fatty degeneration."

I think Martin was right on both counts—as to the bewilderment of anatomical details, which makes the new edition unusable, and as to the "fatty degeneration," which vitiates the whole and makes it undigestible. Some may be inclined to think that this is raking up dead issues; but to one who is grappling with the problem of biological education in the college and university and trying to co-ordinate with this elementary instruction and the present needs of the masses they are still very much alive. And I hope to show how, by adopting the dynamic view-point, we may be greatly aided in escaping

the difficulties of too great anatomical and unessential detail and still have a mentally and morally virile course.

Huxley was a biologist and physiologist by inclination but was forced to be an anatomist by the stress of his battle for evolution. Martin had already passed beyond the heat of this conflict and was a biologist and physiologist to the end. While Darwin did most of the work, it fell to Huxley's lot to fight his battles; and known as he is as the "bull-dog of evolution," since the struggle was fought out on the details of comparative anatomy, his position compelled him to be the foremost master of his data. Naturally the course of instruction which he formulated then was dominated by this fact. It fitted the time to perfection and was a veritable sowing of dragons' teeth to raise up champions for the cause.

Now the conflict is over, evolution has triumphed, and has become the common possession of thinking men. Is it not time to pause and ask ourselves whether a war measure adopted amid the clash of arms should be continued in force indefinitely? Is there no present conflict? Are there not modern issues that should largely dominate our choice of matter and method to-day? Is it less true now that "My people are destroyed for lack of knowledge?" Is the ancient monster of ignorance and prejudice and unfaith in life any less grim to-day? And when the people ask for bread, how long can the biologist put them off with: "Here is a most interesting fossil, will it not do as well?" And when they ask for a fish, how long shall we continue to offer them a type specimen of a snake instead?

The problem is extremely complicated, and in trying to weigh the values which shall determine the elements of our course, we can hardly hope to avoid mistakes and incur more or less serious misunderstandings. There are, of course, new issues and these have influenced modifications of our present courses in biology. Before speaking of these, however, we need to emphasize especially one point with reference to the Huxley-Martin phase of biological instruction. It was splendidly adapted to specialists. It is still a good course for beginners on the road toward medicine or toward professional biology. For those—and they ought to be the vast majority—who look to biology for help toward a liberal education and a sound philosophy of life, it is simply preposterous.

T. Jeffrey Parker's Elementary Biology appeared in 1891. The author is essentially a comparative anatomist and a morphological zoölogist, to the teaching of which subjects he has rendered illustrious services. He is thus well fitted to give us an ultra perfect type-specimen course of essentially form and structure studies. Still the physiological side is good and, apart from the lack of adequate suggestion for experiment, is

all that could be desired. Parker holds to Huxley's original logical order as of too "immense advantage" for the student to be lightly given up, but meets the difficulty by beginning in the laboratory with some preliminary study of a higher animal and plant, more purely physiological and biological. And he also makes the significant statement in his preface that this kind of work might be extended with advantage: "If there were no limitations as to time, and if it were possible to avoid altogether the valley of the shadow of the coming examination." This latter raises the interesting question whether leaders in rapidly growing sciences should maim their students or educate or, failing in that, dynamite their examining boards.

Parker's course emphasizes another point that is most timely. There is already a very general feeling that mere laboratory work may be overdone. There are so many facts, and they are all so "interesting and important" that the most careful of us are in danger of loading the student so heavily with facts that he has no time or energy to think. With this danger in mind, I think that all teachers of biology, who are not too young to have grasped the "ideas" or are not petrified in the Gradgrind mould, will agree with Parker when he says: "That the main object of teaching biology as a part of a liberal education is to familiarize the student not so much with the facts as with the ideas of science."

Personally I feel that the greatest defect in Parker's book is its flawless perfection and completeness. I even hesitate to use it with my own students; because it runs along so smoothly, satisfyingly and restfully; because it typifies that "just-so," *ipse dixit* lecture style that soothes to sleep rather than stimulates to effort, that I fear the students will come out satisfied with what they know rather than eager investigators. In this I do not mean, of course, investigators in biology in the technical sense but, what is infinitely more important, investigators into the problems of their own lives.

Finally we now pass to a type of biological course which places the main emphasis upon the cell as the structural and physiological unit. Pre-eminent in this field is Sedgwick and Wilson's General Biology. No one can question for a moment the importance of the problems in this field to the highly specialized biologist and through him to the public at large. They represent vital and present issues about which the materials and methods of a course intended to produce specialists might group themselves naturally enough. The science of cellular structures and activities, cytology, forms in many respects the present growing tip of biology, and must furnish an increasingly large mass of foundation material for physiology

and hygiene; and, as applied to the reproductive cells, forms the natural basis for a science of heredity.

The feature of this course is the study of few types—Earthworm and Fern—so exhaustively and with such careful attention to fundamental processes and principles that the student will be equipped to study any desired form of animal or plant in a similar way. Theoretically this would seem well adapted to produce specialized investigators. On the side of practical working, however, we are brought to realize that technical equipment can never make an investigator. He must have a tremendous amount of motive power to keep his technique in working order.

From a well developed understanding of the subject as a whole, he must feel that his problem is worthy of his best efforts. Until we give him the "ideas" that can supply this motive power, the danger in forcing the student to the apex of specialization is that he feels that he has already reached the goal. We tire him out so that instead of being strengthened and inspired to go on, he lays down the work with a sigh of relief.

I am inclined to place most of the work in all courses of this character in the stratum of university instruction. For the college the bulk of the course should be on a much lower plane, much more directly and obviously related to the commoner problems of life, and requiring much less specialized technique.

In tracing the progress of biological instruction from Huxley's time down to the present we have seen that the tendency has been toward ever higher and higher specialization. The biologists have flown off on a tangent until they form a little group by themselves, working on their special problems, talking a language of their own and writing books for one another. In the main they have gone far beyond the hail of educated people in other professions. As the science of life itself it would seem that biology should touch the common life more intimately than any other body of knowledge. Is it not true that even now we need another Huxley to bring the science and the world together again?

In 1868, while Huxley was yet a biologist, he wrote an inspired passage—I often call it the finest in scientific literature—which I always read to the class as the text of our year's work. It is all so good, and I see it referred to so rarely, I give it in full.

"And by way of beginning, let us ask ourselves—What is education? Above all things, What is our ideal of a thoroughly liberal education? —of that education which, if we could begin life again, we would give ourselves—of that education which, if we could mould the fates to our own will, we would give our children? Well, I know not what may

be your conceptions upon this matter, but I will tell you mine, and I hope I shall find that our views are not very discrepant.

"Suppose it were perfectly certain that the life and fortune of every one of us would, one day or other, depend on his winning or losing a game at chess. Don't you think that we should all consider it to be a primary duty to learn at least the names and moves of the pieces; to have a notion of a gambit, and a keen eye for all the means of giving and getting out of check? Do you not think that we should look with a disapprobation amounting to scorn, upon the father who allowed his son, or the state which allowed its members, to grow up without knowing a pawn from a knight?

"Yet it is a very plain and elementary truth, that the life, the fortune, and the happiness of every one of us, and, more or less, of those who are connected with us, do depend upon our knowing something of the rules of a game infinitely more difficult and complicated than chess. It is a game which has been played for untold ages, every man and woman of us being one of the two players in a game of his or her own. The chess-board is the world, the pieces are the phenomena of the universe, the rules of the game are what we call the laws of Nature. The player on the other side is hidden from us. We know that his play is always fair, just and patient. But also we know, to our cost, that he never overlooks a mistake, or makes the smallest allowance for ignorance. To the man who plays well, the highest stakes are paid, with that sort of overflowing generosity with which the strong shows delight in strength. And one who plays ill is checkmated—without haste, but without remorse.

"My metaphor will remind some of you of the famous picture in which Retzsch has depicted Satan playing at chess with a man for his soul. Substitute for the mocking fiend in that picture a calm, strong angel who is playing for love, as we say, and would rather lose than win—and I should accept it as an image of human life.

"Well what I mean by education is learning the rules of this mighty game. In other words, education is the instruction of the intellect in the laws of Nature, under which name I include not merely things and their forces, but men and their ways; and the fashioning of the affections and of the will into an earnest and loving desire to move in harmony with those laws. For me, education means neither more nor less than this. Anything which professes to call itself education must be tried by this standard, and if it fails to stand the test, I will not call it education, whatever may be the force of authority, or of numbers, upon the other side." (A liberal Education and where to Find it. Science and Education Essays, pp. 81 ff. Appleton & Co., 1896.)

"To learn what is true in order to do what is right," is another way Huxley had of stating his position; and I have often asked myself what possible connection the learning of a great many of the anatomical details, even in his first edition, could have not only with "doing what is right" but with doing anything at all in case of the non-special student. As he says in his first preface: "The chief labor in drawing up these instructions has fallen on Dr. Martin." Much as I cherish his memory, I think we must remember that he was a young man when he worked out the details of his course. He was a specialist and had not studied principles or methods of education particularly, and he gave the course a distinct coloring of the period.

I have thus come to feel that this whole scheme of biological education has been accorded far more consideration than its due, and has long outlived its usefulness for all purposes of general culture, and I take my leave of it in the confident hope that we shall now be able to find a course better adapted to the needs of the time.

Within the last thirty years real university work has developed to a high degree of efficiency in this country and the preparation of specialists should be relegated to that. Aside from some preparation of a premedical character or for elementary teaching, the problem in the college is to develop courses in biological subjects that shall have the greatest culture value possible; and this, with reference to good citizenship and intelligent living rather than to future specialization.

In the Collegiate Department of Clark University this problem is being solved as follows: I shall describe in detail only the first-year biology, merely naming the other courses in order to show its setting.

First Year.	Second Year.	Third Year.
Dynamic Biology.	Zoölogy, Invertebrate and Vertebrate. Vertebrate Morphology and Embryology (as premedical). Botany, Structural, Systematic and Ecological.	Animal Physiology and Hygiene and Histology, (including a brief course in Bacteriology). Plant Physiology, Histology and Plant Diseases.

The laboratory work is made somewhat different in most of the courses for general culture and pre-professional students.

Study Living Things as Forces in Nature. This, which may be taken as the motto of the first year's course, expresses the change of point of view from the anatomical to the dynamic. This change, of course, furnishes a different set of criteria, under which to select and arrange the subject matter. Still the anatomical type series has recognized scientific value and the fact that this is merely subordinated and not disregarded will be clear as we proceed with the details of the course. The question, then, becomes—What forces in nature have the greatest educational value and what types best serve to exemplify them? We must, of course, answer it strictly with reference to the attainments and needs of our students. Nothing is farther from my mind than to wish to see the course in dynamic biology become as rigid and fixed as the one I hope it may supersede. In fact, it seems to me that it has internal life and plasticity which shall keep it growing. It should differ in important details in different localities, but the greatest change must come from the changing needs of successive classes. Especially now that nature study is being developed in the public schools, as soon as the men come from the high school with

sufficient knowledge of living things, insects, birds, and other common animals, trees, native plants, fungi, etc., to make them good citizens and enable them to play their part in the game of life, it will be time to take another decided moult out of the course I have suggested below. There is plenty of room ahead for that, however, and I only hope the time for it may come soon.

The dynamic types and the order in which they are studied may be seen at a glance in the following diagram.

From the order in which the types are studied it will be seen that ours resembles Huxley's revised course; and, clearly, we may be as "logical" in passing from the complex to the simple as the reverse. We have here the double advantage of gliding easily down on the animal side, thereby gaining momentum to rise through an ideal series of plant forms on the other side. And there is a distinct advantage in studying the vertebrates,

including a glimpse of embryology at the close, as the natural completion of the year's study. The immense superiority and advantage of vertebrate structure and organization over all other plans cannot be properly sensed unless this order is followed.

Dynamically, insects are of the utmost importance, and zoölogically this is the age of insects. There are more than ten times as many insect species as of any other animals; and practically insects form the best possible introduction to the course. They furnish an abundance of forms with which to develop ideas of animal classification without even mentioning "cells" in the introductory lessons. Best of all, fully half the laboratory work through September and October may be done out of doors, a feature to which I attach great importance throughout the course. So far as practicable I would have the student find his specimens for himself and study them in their natural environment first and then bring them into the laboratory for further examination. In practice, however, this cannot be done without too great sacrifice of time and most of the types are not in the best condition for study at the season when the class must do the work; but many of their own specimens the students can collect for themselves, and many more, for the next year's class. All may thus be given incentive and experience in collecting in the field.

During the winter months—from November to April—the laboratory work is almost entirely indoors. Then again from April to June fishes, reptiles, amphibia and birds, together with trees and many points in the plant series purposely left to this time,—supply both matter and motive for out-door study.

After a preliminary lecture hour, in which, however, the class is *not* told what an insect is, the students are provided with collecting outfits and directed to gather in everything they know or think is an insect and nothing they think is not an insect. They are told to turn over logs and stones, tear to pieces old stumps, examine the bark of trees and hunt among the foliage and in the chinks and crevices of fences and buildings. The result of a three-hour laboratory period spent in this way should be the collection of from 100 to 1,000 specimens. We realize, however, how different this is from the usual methods when a number of the class come in without a single insect. "Could n't find any!" One man, a six footer, told me in all seriousness that he had hunted faithfully all the afternoon and did succeed in catching one mosquito, but—"it got away from me!" Generally, however, there will be a few in the class who will bring in enough to distribute to the rest and as a last resort requisition may be made upon the laboratory stock. In a lecture period, having named and described in gen-

eral terms the parts of an insect, we devote the next laboratory exercise to the attempt on the part of each student to classify his material. Along with this work a brief study of the external anatomy of the locust, requiring outline drawings, is made to familiarize the student with the data of classification. Then follows a standard scheme for the classification of insects and the student is furnished a mimeograph copy which he learns to use as an artificial key, and by the aid of which he selects from his own collected material one or more specimens illustrating each class and mounts them for future reference and study.

The next question is: What insect or insects do we wish to pay special attention to as dynamic types? In response to local conditions we selected the mosquitoes and the San Jose scale and have used them for the three years past, and shall probably continue to do so as long as they represent interesting dynamic problems. In addition to these, however, and in connection with students' collections and out-door laboratory work a number of other insects of importance both injurious and beneficial were discussed. On leaving the subject of insects, each member of the class is allowed to choose some insect, or group of insects, to work out during the remainder of the year the life history, foods, natural enemies and general dynamic relations. Toward the end of the year the student presents his results in the form of a lecture before the class; and, at the outset, he is informed that the manner in which this investigation is done will count heavily for or against his rank in the class. I know of no device which serves so well to develop initiative and reveal any facility for investigation which may exist in the class.

The object of all this work with insects is not so much information, or knowledge of anatomy or of systematic discrimination of minute details, or training of the powers of observation. These are only incidental and subordinate results of the chief purpose, which is to introduce the student to the dynamic problem of modern entomology; to actually let him try his hand at it, and learn how it feels to work in the field himself.

I shall not be able to enter even thus fully into details with many of the other topics. I consider one of the chief values to the student of this year in general biology to be the glimpse he gets of the different departments of the science. I look upon the course as a hallway through which to enter any desired department and if his view does not lead to specialization, we may surely make the course yield intelligent interests.

The insect work is on the whole rather easy, on the surface of things, and though the class has been analyzing mosquitoes by their claws, palpi and wing venation, and has studied the mouth parts of the San Jose scale with the compound micro-

scope, it has had no really tough propositions to test its metal. Something of this sort must come pretty early in the course, and it happens conveniently that the Crustacea follow the insects, and that we have a type which might have been made to order for the express purpose of demonstrating how much organization can be crowded into an almost microscopic animal. Cyclops strikes the students like lightning out of a cloudless sky, and they go down before it in heaps. They grovel and groan and give it up. But, finally, when asked whether they really intend to be beaten by such a little creature, most of them straighten their backs and do some creditable work. Of course they have laboratory specimens of lobster, crawfish and a number of the crabs for comparison, and they do a little work with Daphne, and have their attention called to a number of the parasitic marine copepods. A further reason for selecting this type is that dynamically the copepods are probably of greater biological importance as furnishing a food supply for marine and fresh water fishes than all the other groups combined.

With the earthworm as the type of annelid the first serious work is done with internal anatomy. This is studied out organ for organ and cell for cell, but from the point of view of discovering the mechanism by means of which vegetable mould is formed. Other forms are used in a subsidiary way, viz., the tape worm trichina and other nemetodes, flukes, etc., which have dynamic problems associated with them.

The fresh water clam is studied largely from the anatomical standpoint, except that experiments and observations emphasize its foods and its water filtering power. Hydra is used in the usual way as a morphological type.

As many and as varied protozoan forms are studied as time will permit—Acineta, Paramœcium, Stylonichia, Stentor, Vorticella, Actinospherium, Arcella, Amœba, Euglena, Volvox; and special attention is directed to the water-polluting forms—Dinobryin, Synura, Uroglena, Glenodinium and Peridinium. Emphasis is also placed upon the Sporozoa in relation to malaria and other diseases and upon certain Amœbas which cause dysentery. Studied dynamically, with regard to variety of device and mechanism for movement, for securing food and in relation to reproductive power, no part of the course is of greater suggestive value to the student. No forms are so well adapted for showing the plasticity, the tireless activity and the infinite resourcefulness of living matter. All this supplies additional reasons for placing the protozoa in the very heart of our biological course.

Ascent through the plant series is now easy and may be rapidly made, the rather complete list of type forms being cor-

related and used in the laboratory in such wise as to assist rather than hinder the progress of the class. The types are studied in much the usual way, the dynamic features being subordination of structural details while emphasizing the active processes of growth and transformation of food materials. Everything is studied alive and at work, the attempt is made to show the class as many active processes—cell division, conjugation, starch formation, etc., as possible,—special stress being placed on the great reproductive energy of many of the lower forms. For all this the types and the order in which they are introduced speak for themselves. Among the algæ special attention is again called to the water-polluting forms—Asterionella, Anabæna, Clathrocystis, Cœlosphœrium and Aphanizomenon.

The fungi are taken up from much the same general point of view as the insects, prominence being given to the dynamic and economic problems involved. Members of the class are encouraged to work out research-wise the life history of such forms as Monilia, black knot, Peronospera, peach-leaf-curl and other rusts, mildews, smuts and blights. In this way the students are introduced into the important problems of plant diseases.

The fern is used as the type for the minute study of a plant much as the earthworm is on the animal side, and it is worked out cell for cell in root, rhizome and leaf. Thorough work here renders very facile the following studies of the structure of seeds, for which sprouting wheat and the peach serve as excellent types, historic, dynamic and suggestive to the core.

The bacteria are purposely pushed out of their logical position to the end of the laboratory series of plant studies on account of their manifold dynamic relations. A number of the standard culture media are made, demonstration-wise, in the laboratory and distributed in tubes and Petri dishes so that each student may make plantings from the air, water and dust, fly tracks, etc., and thus get a practical insight into bacteriological methods. By the courtesy of Dr. Moore samples of nitrogen fixing bacteria were obtained from Washington, and clover seed was inoculated and planted in pots in the laboratory. Comparative plots were also planted in a garden near by and several of the students did the same in their own gardens. Stained sections of root tubercles were next studied. Of course no culture experiments with pathogenic bacteria are attempted in such an elementary course, although sealed cultures are used for demonstration and prepared slides of a number of important forms are used in a similar way. For example, by the kindness of the physicians in charge a hundred sputum slides were obtained from the sanitarium at Rutland and each student

works over ten marked slides and passes in a written diagnosis as though he were a member of the hospital staff.

The text-book for part of this subject is the Board of Health Reports of the City of Worcester, and, after discussing the general topic of city sanitation and pointing out the diseases that are clearly known to be of bacterial origin, each member of the class is required to go over the entire report, without consultation with others, and hand in a written report giving his estimate of the number of preventable cases of death or disease for the year.

In this way the student is given a clear, practical notion of the rôle bacteria play in the economy of nature—as symbiotic, saprophytic and parasitic, and is thus introduced into the problems of modern bacteriology.

From this point on—which should be about the first of April—the course branches into a number of individual and small-group lines. The main branch, only part of the laboratory work of which is required of the whole class, passes up into vertebrate morphology and biology with a fish, frog, bird and mammal as the types. The pre-medical men, and those who are preparing to teach biology, study the types in much the usual way; but even here experience of the department has indicated that the structural may well be largely subordinated to the biological as giving the more fundamental and educational values for first-year work. The tendency is, thus, to crowd the purely morphological details more and more over into the two succeeding years, giving them a somewhat definitely specialized character.

The outline of this work is, briefly, Fishes, general plan of organization; common species with habitats, foods and spawning habits and seasons, numbers of eggs produced, methods of fishing to be employed in order to keep waters properly stocked.

The Batrachia are studied in much the same way except that the pre-professional section of the class spend more time with the anatomy, and the eggs are used for the outlines of vertebrate embryology—instead of the chick as used in Dr. Martin's course. More attention is also paid to the insectivorous habits of the group by way of feeding tests in the laboratory. The spawning habits and seasons, too, have been more carefully followed by the successive classes in the hope of publishing a complete account of this subject for all our common species of frogs, tree frogs, toads and salamanders. This is genuine investigation in which all the class take part during the spring months—and in some cases the study is continued voluntarily throughout the summer vacation—and the results will fill a serious gap in our natural history. These animals are practi-

cally all more or less important insect destroyers, and knowledge along these lines must come to underlie all practical work calculated to maintain the different species at their greatest efficiency.

The work with turtles and snakes is little more than incidental. A number of specimens are always collected during out-door laboratory periods and these may be utilized by some member of the class for feeding tests, and they also serve to demonstrate in a general way the various types of organization and some of the salient biological relations.

The study of birds is begun early in the fall with a brief statement that each member of the class will be required to know at least one hundred common species and be able by the end of the course to describe them as to color, markings, notes and songs, migration periods, habitats, nesting habits, and especially foods. By thus early sketching the plan of work for the year the student is enabled to organize all the knowledge he already has and utilize every opportunity for observation which may render his knowledge more complete. His attention is also called to a number of standard bird books including many of the U. S. Government Reports which give the foods and economic values of different species. These are kept for reference on a shelf in the laboratory. He is also required to supply himself with a field note book, and this is inspected from time to time, suggestions made, and then finally graded at the end of the year according to amount of work accomplished.

The species used as a dynamic and anatomical type is the English sparrow. The Bulletin of the United States Department of Agriculture on the English Sparrow in North America is referred to in detail on the foods and economic status of the species. The students are directed to note carefully observations under these heads, especially with regard to the relations between the English sparrow and native species, and finally the most effective methods of dealing with the intruders are considered.

Little work is attempted with mammals beyond noting general organization, and position in the animal series, leaving practically all the anatomy and special physiology to succeeding years. Toward the end, a little review work and some general suggestions are directed toward comparing the nervous systems of the various invertebrate and vertebrate types to introduce the student to the problems of modern neurology.

In order to accord plants their due share of attention a few suggestions toward systematic botany and the means of determining species are given and particular attention is directed to habits, habitats, seasons of flowering and ripening seed, geographical range and economic importance of native forest trees.

This part of the course is intended to give the students a glimpse into systematic botany and forestry.

I should add in conclusion one other feature of the entire course. The æsthetic is an important factor in the study of living nature; and while I should be inclined to give dynamic relations precedence in determining selection of types, between two types of equal dynamic importance I should choose the more beautiful. And, furthermore, we constantly discover æsthetic elements in the ugliest of types; and when by the aid of the dynamic standpoint we gain an insight into adjustments with environment and harmony in nature, we reach a deeper plane of æsthetic relations even more vital to our philosophies of life than that which lies on the surface. Very little can be said about all this and the less said the better, so long as the student is brought into personal relation to the fact that nature is beautiful to the core. Haeckel's "Kunst Formen der Nature" is the text for this phase of the course.

Nothing is farther from my thought than to claim for the above course anything approaching perfection. In fact, one of my chief motives for submitting it to the public in this form is to ask for criticism and suggestion by any who may be struggling with the same problem. I may add that from three years' experience the course seems to meet the requirements of the case rather better than I had dared to hope. It has apparently enabled a number of my students to discover their bent and decide upon their life work. Many more, who are specializing in directions other than biology, bear ample testimony that the work has not died within them but has become one among the number of permanent and cherished interests. When a young man a year or two after taking the course comes to me and says: "I am coming to realize more and more what our study of biology really means. Walking used to be rather dull business with me, but now it is more interesting than a novel. Every bird and tree and moss and fern and insect, frog, toad, fish or even snake has something new and interesting to tell me," may we not feel that we are, at least, approaching a solution to our problem?

. I cannot close without again acknowledging my indebtedness to Huxley; and when he writes: (Evolution and Ethics, p. 50, 1893.) "Thus the most obvious attribute of the cosmos is its impermanence. It assumes the aspect not so much of a permanent entity as of a changeful process, in which naught endures save the flow of energy and the rational order which pervades it"—is he not clearly pointing toward dynamic biology? And again he says: "I cannot but think that there is room for all of us to work in helping to bridge over the great abyss of ignorance which lies at our feet."

BOYS' GANGS.[1]

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Conditions of the Study. The boys who furnished the reports that form the basis of this study are pupils of the Lyman School for Boys, Westborough, Mass. When the boys enter the school they are examined in their studies and asked a number of questions concerning their social life before coming to this school: their homes, school, church, and associates. The answers to the last subject led to the study of the gang. It took a long time to learn how best to ask the questions, but after a while the boys answered naturally and freely. After they had been in the school for some time and we had become better acquainted, several were questioned the second time and told what was being done with their answers and asked to help in the work. This many of them freely did.

The names of boys are not given but each number given refers in every record to the same gang. The answers are often not in good English and sometimes seemingly contradictory, but they are written down as nearly as possible in the boys' own words.

The following list of questions was asked and the answers recorded at once.

Name? Age? Nationality? How many boys did you go with? What is the name of your crowd? How old is the oldest? Youngest? What are the nationalities of the boys? How many French, Irish, Germans, etc.? Do you have any nicknames? What are they? Why called this name? How often were you (boys) together? Where did you meet? Did you allow other fellows around there? Who was the leader? Why was he the leader? How chosen? How could a fellow get into your crowd? What did you do to a fellow when he came in? Did you ever put a fellow out? Why? How long have you fellows been going together? Who started the gang? What did you do for fun? Summer? Winter? What did you do nights? What did you do Sundays? Did you go off anywhere?

[1] I am indebted in this study to many suggestions and helps by Pres. G. Stanley Hall and Mrs. E. Hope Puffer and to the boys of the Lyman School for their co-operation.

How? What did you do that was unlawful? Did you ever plague anybody? Did you ever have any fights? Did your crowd fight any other crowd? Did any of you work? How many loafed? How many went to school? Did you have any rules? What? How did you get your money? How did you spend it? Did any of the boys drink? Smoke? Did you play cards? Gamble? How? Did you run away from school? Why? How did you settle disputes? How did you treat girls?

Definition of Gang. (1) The boys' gang may be defined as a number of boys who go together, and because of their mutual sympathy and friendship will stand by each other.

The Gang a Social Institution. The boys' gang is not generally reckoned with as of any great importance among social institutions. It does not generally come to the notice of the casual observer unless it is in connection with some mischief or crime perpetrated, and then the boy is generally reckoned with individually without regard to the gang, but it is a common sight to see a half dozen boys on the corner snowballing a passer-by. No one of the boys is to blame for the snowballing for no one of them alone would have dared to trouble the person; the gang as an institution is to blame. This simple instance typical of a hundred, illustrates the relation of the individual to the gang group.

Of one hundred and forty-six boys studied in this school, one hundred and twenty-eight went in gangs (reckoning three a gang). In Sheldon's (12) study of the spontaneous activities of American children, out of 1,034 responses, 851 were members of gangs. It is safe to say that three out of four boys belong to a gang. The gang is therefore a common social institution and is responsible for many of the activities of a boy.

Size of Gang. In sixty-six gangs there were 651 boys. This makes an average of a little less than ten boys to each gang. No company of boys was studied less than three, although two boys may form a company which serves nearly all the purposes of a gang. Of one hundred and forty-six boys studied in this school, two claimed not to go with any one, sixteen went with one companion and the rest in a company of boys, varying from three to fifty. In the sixty-six gangs studied were five gangs of from twenty to fifty boys. These few brought up the average number so that a normal boy's gang numbers from five to eight or nine. The larger gangs often split up into smaller gangs. There are nine records which show this tendency. The larger gang hangs around the corner while the smaller gangs split off to steal, play tricks, skate and fish.

Names of Gangs. (2) (11). The following are some of the typical names.

4. The Island Gang. 5. Medford St. Gang.
6. Dowser Glums. 8. Hick St. Fellows.
12. Arlington Gang. 13. The Club.
22. Bleachery Gang.
23. Bones St. Club. 24. Dirty Sixteen.
26. Green's Corner Gang.
33. Wharf Rats. (Meeting place a wharf.)
34. Eggmen. (Because we used to rob farmers.)
36. Spencer Ave. Crowd. 37. B. Streeters.
40. Willows.
42. Jeffries Point Gang. 43. Methuen Gang.
56. Liners. 58. Morse Hollow Athletic Club.
59. Jenhine Boys. 60. Gold Streeters.
62. Crooks.

About two-thirds of the gangs had names. Twenty-three out of the thirty-nine names used are taken from the street on which the gang meets. Nine more are given the name arising from the place of meeting as The Island, Wharf, Point, etc. The names Dowser Glums, Dirty Sixteen, Eggmen and the Crooks arise from the character and deeds of the boys.

Nicknames. Nineteen boys were asked for the nicknames used in their gangs and the reasons. Only one said that they had no nicknames. The answers show that boys are very fond of using nicknames and they get them from abbreviations of names, from some physical feature or peculiarity, or from some prominent trait of character. The following are characteristic.

No. 43. Called "Gulliver because he travelled so much. Spud because he was an Irishman. Puggie because he had a flat nose. Bull Dog because he stuck to it when he started a thing."

No. 46. Called "Giezer because he was an Italian. Crosseye because he was crosseyed. Bannex, a fellow at stable gave me the name."

No. 47. Called "Bob White because he whistled like a Bob White."

No. 48. Called "Black boy because he was a negro. Yellow boy because he had yellow hair. Chicken because his name is Henson."

No. 50. Called "Ginger Head because he had red curly hair."

No. 52. Called "Post Office because he gets fresh. Base Ball because he is a pretty fair fellow in playing base ball. Happy Hooligan because he is a happy-go-lucky fellow."

No. 55. Called "Bum. All the time hanging around the corner, never worked."

No. 56. Called "Couch. Used to go in long pants. Took them off again and looked like a kid so we called him Couch. Fung Lung because he never washed his face."

No. 59. Called "Joe Six Toes because he had four toes cut off."

No. 65. Called "Fat because he was so fat. Nigger because he was dark tan color. Scarecrow because when he was playing football he did n't dare get near the ball. Sheeney gave him that nickname because he made lots of fun."

There are eight nicknames abbreviated from names, Mick from Mike; Bobby from Robert; Nick from Nicholas; Dick from Richmond; Billy from William; Raffies from Raphael; Bossy from Bossfield; Sully from Sullivan. There are nineteen names with no reason given. Joker, Butcher, Bunch, Dinny,

Donkey, Jack and Doodle, Bum, Foxy, Hoagy, Rubber, Wiggy, Smuck, Dinso, Duffy, Barb, Popey, Bannex, Dusty. Fourteen received their names from some physical feature. Lefty, Nigger (2), Puggie, Spud, One-armed-crook, Crosseye, Bob White, Black Boy, Yellow, Couch, Ginger Head, Joe Six Toe, Fat. Eleven boys were named from some trait of character, Gulliver, Bull Dog, One-armed-crook, Chicken, Post Office, Base Ball, Bum, Fung Lung, Scarecrow, Sheeney, Happy Hooligan. It would be safe to assume that many of the following names classified under the unknown reason are given because of some trait of character, Joker, Donkey, Jack and Doodle, Bum, Foxy, Smuck. Three received names from nationality, Dutchy, Giezer, Spud. One inherited name from father, Chicken. One boy was called Quaker because he lived with Quakers for a while.

Age of Boys. The average age of boys studied was thirteen years and eleven months. The youngest boy was eleven and the oldest sixteen. The boys of the gangs studied averaged from twelve years one month to sixteen years three months. The youngest boy in the gangs was seven and the oldest was nineteen.

From Sheldon's (12) study of gangs it is seen that the period of greatest activity of gang life is from ten to fifteen years of age. 87% of the boys' spontaneous societies are formed at this time; 7% before ten, and 5% after fifteen. The boys studied at this school were mostly at this age.

Nationalities of Boys. The majority of the boys who come to this school are Irish and therefore the greater percentage of the boys studied are of this nationality. Out of the sixty-six studied, Irish 35 or 53%; Americans 8 or 13%; Germans 7 or 12%; French 6 or 9%; Italians 3 or 4%; English 3 or 4%; Negroes 3 or 4%; Scotch 1 or 1%.

In the gangs there are 362 boys of whom the nationalities are recorded in 47 different gangs. Irish 186 or 51%; Americans 70 or 19%; French 40 or 11%; Italians 21 or 6%; Germans 15 or 4%; English 14 or 4%; Negroes 6 or 2%; Poles 5 or 1½%; Scotch, Portuguese, Jews and Swedes 5 or 1½%.

From the nationalities of the boys studied the expected number of boys of the different nationalities are found in the gangs.

Nationalities are recorded in 47 gangs. Irish are found in 41 gangs; Americans 20; French 18; Italians 7; English 6; Germans 5; Poles 3: Negroes 2; Scotch 2; Portuguese 1; Swede 1; Jew 1.

As the boys studied come mostly from the densely populated parts of cities, they come from a mixed population of Irish, French, Americans, Italians and Jews. The other nationalities mentioned are not large in the population. The Jews appear

to be the only class excluded and they exclude themselves. Eleven only of the forty-seven gangs were all of one nationality. In more than the expected percentages of the gangs the Irish, French, Americans, English, Germans and Italians are found. These records show that the boys of different nationalities associate freely together and are unprejudiced and democratic in their gang life.

Location of Gang. Boston 17, Waltham 4, Lawrence 3, Cambridge 3, Lynn 3, Everett 3, Worcester 2, Lowell 2, New Bedford 2, Haverhill 2, Peabody 2, Chelsea 2, Newburyport, Springfield, Brookline, Brockton, Chicopee, Marblehead, Leominster, Revere, Stoughton, South Braintree, South Royalston each one.

Out of the fifty-six gangs only three came from country towns and only four from places less than 10,000 in population. This does not show that there are no gangs in the country towns but it does show that boys from country towns, whether they belong to gangs or not, are not often sent to a Reform School.

It is not safe to draw the inference here that the city gang is worse than the country gang for country boys are not arrested and brought to trial for the same offenses as city boys.

Time and Place of Meeting. Out of the fifty-four records, there are only seven gangs which do not meet every day. If boys are free from work and school they intend to be together all the time. Forty-seven met every day (seventeen say "by day," twenty "by night," two "morning, noon and night," three "every day and night," two "all the time" and three "every day after school"). Three met three times a week, two twice a week, and one once a week.

In records of sixty-three gangs all but four have regular meeting places. The four met anywhere. Seven gangs met in two different places and three in three different places. This leaves forty-nine out of the sixty-three which had one definite meeting place.

Out of seventy-seven recorded meeting places there are eleven records of gangs meeting on a street and twenty-seven records of meeting on the corner of streets. This means that about half of the gangs had their meeting place on the street or corner. There are four records of boys meeting in club rooms, and three of meeting in a house, but in contrast to this may be mentioned one in a shanty, one behind a barn in the woods, one in a house made of old barrels on back street, two in a shed, one in a hencoop, one in a club house in the woods, one in a tent in the woods, one in a tent in yard, one in a dug-out, one in an empty attic, one in the cellar of shed. This makes twelve instances of boys selecting places of meeting which are crude.

Boys do not like parlors. They do not prefer a nicely furnished room for their meeting place. The records of these gangs show that they select a street or corner, or an old shed, or coop for their place of meeting. It may be said that the boys are forced to meet in such places, but I think they prefer a crude place which they can fix up to suit their own tastes. Boys like to have a tent in the woods. Boys in country villages nearly all build camps in the woods at the gang period.

Ownership of Meeting Place. The sentiment in regard to ownership is best expressed in the boy's own words.

4. "Would n't let any gang on that street. Gave a strange boy a licking."
5. "Thought that Medford St., belonged to us. If a strange boy came round try to pick a fight with him."
42. "Fought with Elm St., gang and Lawrence toughs. Fought over the possession of a certain street."
45. "If another crowd came on our street have a game with them."
47. "Nobody came around there. Afraid of us. We would n't allow any gang to come around there. Kick a strange fellow away."
50. "Big fellows meet on same corner. They don't do any harm. Strange boy come around they grab him and fish his pockets. Take anything he has got. Insult any other gang."
51. "If a strange fellow came around, if he kept quiet, did n't do anything."
55. "Made a fort. Sewall St. gang, tried to take it away from us. We pelted them with snowballs."
56. "Allow other fellows on street, we could n't stop them."
59. "Tell fellow who came around to get out."
60. "No other gang came around. Every corner has a gang. Corner belonged to us."
64. "Let other fellows come around."
65. "Had that corner all ourselves."
67. "Another big gang met there. If we were there when they came we had to get off."

Twenty boys were asked the question "What did you do if other fellows came around your place of meeting? From the answers given it is plain that most gangs thought that the street or corner where they met belonged to them. The strange fellow or another gang were given an unpleasant reception.

Territorial Limits. By these records, which are typical, it is shown that the gang is a local affair. It has one meeting place and the boys come from the same street or district. A boy who moves around in the gang territory is allowed to come in if he meets the approval of the crowd.

4. "We all live on Lamartine St."
5. "Anybody moved around there, we thought safe to come in we would let in."
22. "If they lived down there, and fellows knew him, he could get in with them."
26. "Fellows all come from two or three streets. If he moved round there and wanted to join he could."

31. "Fellows who lived up that way could be in crowd."
33. "Came from down around the wharves."
40. "All but one lived on Willow St."
42. "All from one street and a little street off from it."
43. "All live on same street."
49. "Anybody who moved in Willow Park could come in."

Leader. Typical records selected from sixty-six reports are as follows:

1. "A—was the oldest and largest. He collected us and got us into it."
2. "T—was leader. English, good natured, good player at anything."
4. "J—was the ring-leader, steals most, says come on."
5. Three different leaders. "I was leader in making tent (pleasant, small, long-headed). L—was leader in stealing doves."
6. "No leader. All planned together."
7. "Three officers. Captain of ball nine, captain of football, and treasurer. The treasurer collected things at M—'s house."
9. "P—was leader. He was the sharpest. He always wanted to go first."
10. "President. Voted with paper. Six votes to elect Pres., changed every two months. Manager of ball team. Captain of baseball. The nine elected baseball captain. President read rules if we disobeyed, and held money. Manager got ball games."
12. "G—was leader. He gave you anything if he had it. Worse one in gang."
13. "I used to be leader. I was the smartest." (Bright and proud.)
17. "D—was leader. He could fight the best and had most money."
20. "H—was leader. Wanted to be leader. T—was the smartest but he did n't want to be leader but was leader some of the time."
23. "President, Secretary, Treasurer and three Selectmen. President reports disorder. Selectmen vote on fellows coming in or going out at club."
24. "I was leader. Good-natured, athletic. Had stumps and the one who could do most stumps would be leader."
28. "T—was leader. Oldest and smartest. Had more money. Had all the money he earned."
30. "I was leader." (Smart and active. Took pride in being the best fellow. Won the position of being best fighter in house.)
31. "D—was leader sometimes. Dare us to jump off from high places in swimming."
32. "No regular leader. One fellow propose a thing he knew most about and take the lead."
33. "No regular leader. H—I guess was leader. Thought he could lick anybody in crowd."
49. "R—was leader. Smartest fellow there and best ball player. Best skater. Highest grade in grammar."
50. G—was leader. Big stout fellow. He is always bringing a gang around him."
53. "O—was leader. He would chase everybody away. Lead in breaking and entering."
54. "B—was leader. Always lead and boss around. Kind of a head one over them."
55. "D—was leader. Pretty good fellow. Happened to choose him. Most daring fellow. Chose him by ballot. He got seven votes."
58. "A—was leader. One that could jump the farthest was made the leader. President jumped the farthest. V. Pres. jumped next the

farthest, Sec. jumped the next farthest. Treasurer jumped the next farthest. Club was for athletics so that was the way we wanted it."

59. "I was leader. I was n't afraid of anybody."

61. "Anybody that they wanted to be. I was once. Most all of them had a chance at it."

62. "S—was leader. He would run away from school and get us to go with him."

Number of Leaders. Of the 66 gangs 44 had one leader (66⅔%); no regular leader 8 (12%); two leaders 8 (12%); three leaders or officers 4 (6%); four leaders or officers 1 (1½%); six leaders or officers 1 (1½%).

Two-thirds of the gangs have one leader and one-third have more than one leader or officer. The gang often has different leaders for the different things to be done, and in a few instances there are two fellows competing for the same place as leader.

It is difficult to make a definite classification of leaders. Twenty boys evidently took the lead in everything and may be called all-round leaders. Twenty-four more are specified as leaders in playing, fighting, baseball and football and may be called athletic leaders. Twelve were officers, three presidents, one secretary, four treasurers, one a manager, and three select-men, not all of whom are necessarily leaders.

It is interesting to notice the characteristics of their leaders as given in the boy's words. 14 said that the leader was the oldest; 13 that he was the largest; 13 best player; 10 best fighter; 6 wanted to lead; 6 was good-natured or generous; 5 smartest; 4 started games; 3 best stealer; 2 highest grade in school; 2 had most money.

Boys are hero worshippers and naturally follow the person who has the traits which they admire. The leader takes his place as naturally as the boys follow. Physical prowess wins him his position. The boys admire the fellow who is the largest, best player, best fighter, and has the courage and initiative to go ahead and do things. Good nature and generosity are admired by the boy and sought for in a leader. Ability as a student or social distinctions do not often count in the selection of a leader.

Election of Leader. In the records we often find such expressions as the following: "He collected us." "Got us into it." "Says come on." "Always wanted to go first." "He asked to do things." "Wanted to be leader." "Took the lead in stumping." "Made up the team." "Took the lead in the games." "He was kind of a head one around there." There are twenty-four such expressions which show that the boy took the lead. In four cases a boy was informally put in as leader and four more were elected by ballot. A formal method of election is therefore rare and in two-thirds of the

cases there is no election, but the boy takes his place because he wants it and the other fellows want him to lead.

At the McDonough School the same informality of leadership is recorded by Johnson (9). "At McDonough no president is known. Whoever is most influential takes the lead in dispatching the business of the moment."

Starting of Gang. The different ways in which gangs started are thus described by the boys.

1. "Leader collected us."
4. "All live on one street. M—started it. Asked us into the gang."
5. "When we first moved around there we gathered together and kept together all the time."
8. "I, leader, started it. It was cold standing on the corner."
23. "Boys started their own club. Stood out in cold. Talked it up, then chipped in and had a room."
34. "We used to hang around the corner and we made up that we would go together and nobody else should come with us."
50. "The leader started the crowd. Got a crowd around him."
54. "The leader in baseball started the crowd."
55. "Three fellows M—, D—, and I proposed having the club and we got the other fellows."
56. "The boys hung around the store and then they got into a gang."
59. "G—, the best wrestler started it. He wanted to make up a crowd to meet every night."
62. "Two of the boys started it."
63. "P—fellow, the leader, and I thought we would get a gang up."
64. "Used to go to school together, that's how we got acquainted."
66. "Another fellow, the leader, started the crowd. He moved away and then I got in leader."

As a rule the boys do not know how the gang started, for only seventeen could give any report. Of seventeen records of the starting of gangs, the leader started six, the leader and another boy started two more, a boy not the leader started one, two boys started one and three boys started another. The six remaining gangs came together by moving round there, meeting on corner, hanging round a store, and going to school together. It appears that more gangs are started by a leader than in any other one way.

Conditions of Membership. The entrance to a gang is usually informal.

4. "Did n't let anybody in after we started."
5. "Anybody moved round there we thought safe to come in let him in."
6. "Any fellow could bring in a fellow if others approved."
7. "If a fellow was a good ball player let him in, or an all round athlete."
9. "Tell them to come along with us. Have fun one night come right along."
10. "Put him on probation for a certain time. If he wanted to get in bad let him in. See if he plays ball good."
12. "If he was a good guy and round the corner every night, after a while let him in if he was not a squealer."

14. "When he moved on our street fellows bring him round. If he wanted to belong he could."
23. "Any fellow could recommend a fellow to Selectmen. They vote on him."
26. "Did n't care whether person belonged to crowd or not."
31. "Anybody who lived up that way could come into the crowd if whole gang knew him."
32. "New fellow. We would not have anything to do with him for a while. If he knew enough to keep still let him in."
35. "Anybody was welome to join the crowd."
38. "Go down and hang around there, you could get in."
41. "Ask a fellow to go with them."
42. "If he came around to live there and if we thought he had courage to do things let him in."
43. "When one fellow went out let another fellow in. Get a fellow who would keep things to himself."
45. "Let him in on condition that he would not tell anybody. Keep his mouth shut."
47. "Would n't let any one in. We did n't want any one. We wanted to stay ourselves."
53. "Leader decided who could come in."
54. "Go around and ask fellows if certain fellow could come in. If most said 'yes' he could come in."
55. "Let in fellows the leader said would be alright to come in."
57. "Let anybody play with us. Would n't let him in to any other secret. Did n't let any one go with us on trips."
58. "Would n't let a fellow in unless he could play baseball or football."
59. "If any one voted against a fellow to come in he could n't come in."
60. "Let anybody in unless he was a squealer."
61. "If you knew he was n't a blower let him in."
62. "Would n't let a fellow in if he would tell on us."
63. "A fellow who was n't scared to do things let him come in."
64. "Leader decided who should come in."
65. "Would n't let anybody in crowd but us four."
66. "If he could keep secrets let him in."

Of these gangs 8 were exclusive; the others admitted on following conditions: if the new member was not a squealer, 9; moved into neighborhood and approved, 7; approved by fellows, 6; approval of leader, 3; because athletic, 3; because courageous, 2; formal vote, 2; because they wanted to come, 2; invited, 2; let any one in, 4.

These statistics show that forty out of the forty-eight gangs did not have to look for members. They allowed fellows to come in but did not go after them. The entrance to a gang is informal. In only two cases is a formal vote taken. In three cases it is seen that the leader had everything in his own hands, but generally the power of approval lay with the fellows in the gang. Forty of the forty-eight gangs are exclusive in the sense that they would not allow anybody to come in who so pleased, and eight are exclusive in the sense that they would not allow any one to come in on any condition.

Loyalty is the virtue which wins approval in eight instances, physical prowess in two, and courage in two.

Initiation. Out of forty-eight gangs only eleven report any form of an initiation. Five out of the eleven suggest that the boy had to pass through a probation period. The boys take the putting off attitude until they have tested their fellow to be sure that he is not a squealer and then have him give a pledge to keep secrets. There are but five instances where the boy receives a physical initiation. The following cases illustrate the usual methods of initiation.

7. "Sometimes pounce on a fellow and give it to him for two or three minutes."

10. "Put him on probation for a certain time if he wanted to get in bad let him in. A new boy had to pay ten cents a month for four months."

12. "If he was a good guy and round the corner every night. After a while let him in if he was not a squealer."

24. "Had to bring something (cigarettes) to make sure he would stay in the club. Had a dark hole, had a barrel half full of water if he would not go in, chuck him in.

32. "New fellow. Would n't have anything to do with him for a while. If he knew enough to keep still let him in."

42. "Punch and rapped him all over. Put him up in the air and throw him down for five or ten minutes. If he did n't cry let him in."

43. "Make him take an oath to keep secrets. Put him on a freight train and send him off alone to see if he could get back alone. One fellow sent to watch him."

55. "Make him sign his name and pay the dues, ten cents a week."

59. "Have him wrestle with Gibson to see if he was strong."

67. "See if he was trustworthy. If he could keep secrets. Try him first. Show him something that we stole. If he did n't tell let him in."

At the Springfield Training School this question was asked fifteen boys, age thirteen to fifteen, by T. J. Browne (1). "When a new boy comes into your set how do you treat him?" The answers were as follows:

(1) We initiate him. (2) Kindly. (3) Rough at first, see if he'll stand fooling. (4) Roughly. (5) Make him run the gauntlet. (6) Treat him well if he is the kind we like. (7) We generally make him run the gaunlet or take a good hammering from us. (8) Don't allow new boys in. (9) Dose him under the faucet and take his shoes and stockings off."

Five out of the fifteen answers suggest some form of a physical initiation. One gives a definite programme.

Expulsion. Out of thirty-eight reports of gangs none were put out in 17; but boys were expelled for squealing or spying in 10; for fighting when it was not right 3; in for bossing, failing to pay dues, getting fresh, making trouble, disobedience, would n't play ball or pay dues, running off when needed to fight, leader put him out, in one for each. It is noteworthy that ten were put out for squealing and one for running away. This makes eleven cases of disloyalty. The rest are not im-

portant. In only one case was there a formal method of expulsion. The following illustrate the reports in regard to expulsion.

4. "Never put any one out."
5. "If a fellow said he was going to leave give him a licking."
6. "Put a fellow out for spying or for telling anything about the club. Tell him we did n't want him and then if he did n't take the hint force him out."
7. "Tell a fellow he did n't belong there and he would leave."
8. "Put three out for bossing and running the place. Wanted us to buy a bed for them. Told them to get out."
9. "If he does anything and tries to get us into it we tell him not to come round with us."
11. "Put a boy out of gang for fighting when he did n't need to."
22. "Can stay in as long as he wants if he once gets in."
23. "Failed to pay dues for three weeks, put out. President reports a fellow for disorder, two votes puts him out. Once out could not come back."
26. "Put a fellow out once for fighting with another boy. The other fellow was in the right."
34. "Put one fellow out for getting fresh but he was back the next night."
41. "Put me out because I said one fellow did n't have spunk to play spunk the leader."
42. "Kicked one fellow out for telling on the others."
50. "Put a fellow out because he would always squeal on them."
51. "If he went against us call him a back biter. Chuck him out."
56. "Put a fellow out for squealing on them. Tell him to get out of the gang. Leader put him out."
58. "Put a fellow out because he would n't play baseball or take his share of expense."
60. "If a fellow told the cop what we were doing put him out. Tell him to get away, make him get away."
61. "Put two or three fellows out for squealing."
62. "Put a fellow out for spying. Told him not to come with us."
63. "Put him out because he would run off when needed to fight."

Rules of Gangs. The following rules or customs were given by the boys in answer to the questions: Did you have any rules, and why did you put a fellow out of the gang?

4. "If he lied to any of us fellows, called him a squealer. Call him a spy if he told on us."
5. "If a fellow lied to one of us fellows put him out of the crowd for a week."
6. "Put a fellow out for spying or telling anything about the club."
7. "Never allow a big fellow to pick on a little boy. We were against smoking."
9. "Stick up for one another. If one fellow does anything and tries to get us into it, tell him not to come around."
10. "Fined a fellow ten cents if he swore; five cents for chewing; five cents for smoking, and five cents for not trying to live up to the rules."
11. "Put a fellow out of gang for fighting when he did n't need to."
12. "If a fellow lied to a fellow of our gang we would snowball him. If he lied to a fellow out of the gang it was nothing to do with us."
16. "Helped each other out if we got into trouble."

23. "Had to be at work when he comes into gang, must pay his dues."
26. "Put a fellow out once for fighting with another boy. The other fellow was in the right."
31. "Kick a fellow out if he lied to us kick him out if he lied about us to fellows outside. Do nothing to him if he lied to defend us."
32. "If any two stole anything have to share it with the rest."
42. "If one fellow got into trouble all stand up for him. If a fellow told on us make trouble for him till he gets sick of it. Put a fellow out for telling a lie."
43. "If one of the fellows gets hit stand up for one another."
44. "Fight if boys did not divy up."
45. "Put a fellow out for telling what we did."
46. "Throw a fellow out for telling. We get mad if a fellow would n't divy up."
47. "Any one in danger we would all turn to and help him out. We never told anything on each other."
49. "Call a fellow a squealer if he told on the rest."
50. "All stand up for a fellow in trouble. Put a fellow out who told on the crowd."
51. "Kick a fellow out if he told on the rest. If they would n't do what the other fellows told them to do put them out."
53. "If they did n't share up a fight would begin."
54. "If anybody picked on one of our fellows, we would fight them."
55. "Stood by each other."
56. "Put a fellow out for squealing."
57. "We punched the life out one fellow, nearly, for telling on us."
58. "Members had to be there Wednesday and Saturday. Each boy paid equal parts for ball."
59. "We were all supposed to meet every night. If any other gang made trouble we were all to go."
60. "Make a fellow get out for telling the cop on us."
61. "Put two or three fellows out for squealing."
61. "If a fellow did n't divy up we start fighting with him."
63. "If a fellow squealed on us give what he wants (needs). Make it hot for him if he lied to us."
64. "Called me sqnealer for telling on the gang but I got back pleased with them again."
65. "Would n't let a boy in crowd if he stole. If a boy told on another fellow made him pay dues every week."
66. "No fellow ever told on us. One fellow was caught. He stayed in Charles Street jail three months before rest of us were caught."

Of the fifty-one rules reported by various gangs eighteen were against squealing, eight against lying to one of the gang, and eight required standing by each other in trouble. This makes thirty-four rules which stand for loyalty. A rudimentary justice is found in these rules. The principle is: "I stand by you, you stand by me."

Three rules were for "divying up" things obtained by any member of the gang, two for paying equal parts, and three were against fighting when unjust. Under all these rules is the idea of justice, and under the last a very high kind of justice.

Two rules required attendance, and one obedience to the

majority. Six might be classified as moral,—two of these against smoking, one against swearing, one against chewing, and one against stealing. Three of these were found in one gang.

These rules express the public opinion of the gang. In only one case could they be called a code of laws (No. 10). Although the rules are not written down they are strictly enforced. Expulsion is the common penalty.

The Gang a Permanent Institution. As only seventeen out of forty-six boys questioned could tell how the gang started, it is plain that a gang is not a short lived institution. Eleven of the number state that they had been in a gang five years or more, four for over three years, and two for two years, ten for one year or more, and nine for less than one year. Six said that they had been going together for a long time.

Settling Disputes. In answer to the questions: Did you have any disputes? How did you settle them? Responses like the following were received:

5. "If there was a dispute leader settled it. If two fellows were fighting for a thing we took it away from them and gave it to another fellow. In playing dice chuck the fellow out who made the dispute. Break up the game. Take the boys and go off and leave him."
12. "If there was any dispute have a scrap over it. One that got the worst of it give up."
13. "If we got mad we would n't go with each other for quite a while."
20. "Have a dispute as to who was the best fellow. Fight it out."
36. "I, leader, would settle disputes. I would say whether it was right or not."
46. "A fellow would n't share up so fought him."
53. "If he did n't share up a fight would begin."
56. "Fellow did n't want to play captain put him out and put another fellow in his place."
57. "Quarrel for five or ten minutes and then ask N—to settle it. We would be satisfied with what he would say."
58. "The officers would most always settle the disputes. Talk it over, get circumstances, then settle it."
60. "One of the bigger boys would settle it. They would stop the fighting."
61. "Give one of them a kick that would settle it."
64. "Settled disputes by fighting. I had a fight with M—. Neither of us licked."
65. "If we had disputes we would vote on it. One who would get majority to him we would leave it go."

Disputes were settled by fighting in 10 instances; by the leader in 3; by putting fellow out in 2; by a bigger boy in 2; by voting in 1; by officer in 1; by staying away from each other in 1; by an outside person in 1; and by kicking the fellow in 1. The most common way of settling disputes is by fighting, but the seven instances where the trouble was settled by the leader, by officers, a bigger boy, an outside person, and

by voting, show that a method of procedure aiming at justice is often adopted.

Treatment of Strangers. About twenty boys were asked how they treated strange fellows. There were the following responses.

4. "Give a strange fellow a licking."
5. "If a strange fellow came around try to pick up a fight with him."
47. "Nobody came around there. Afraid of us. Kick a strange fellow away."
48. "Anybody could go by there."
50. "Strange fellow came around they would grab him, fish his pockets. Take everything he has."
51. "If a strange fellow came around, if he kept quiet, did n't do anything. If he was silly throw bricks at him."
54. "Did n't trouble a strange fellow."
59. "Tell fellows who came around to get out."

Boys of gangs have little sympathy or regard for strangers and treat them as enemies. There are only a few records, but in five of these a strange boy was maltreated, and thirty-five of the records given later under the topic of Plaguing People can be reckoned as maltreatment of strangers.

Treatment of Girls. Out of the eleven records concerning treatment of girls five had nothing to do with them, and five more did things to plague them, by calling names and doing mean things to them. One said that he treated them all right. Here are not enough instances for any conclusion but the few records are in line with the conclusion of Sheldon (12) that boys and girls do not associate or organize together. They have no interests in common.

4. "Plague girls. Ask them for a kiss and things like that."
5. "We never used to think of girls. I don't know how to treat them. I never tried it."
12. "Treated them all right."
13. "We never used to go with any girls."
31. "They never go around with any girls. They never say nothing to them. Sis at them."
36. "Some of the gang threw kisses at them. None of my gang ever struck them."
62. "Sometimes do mean things to them. Swear at them. Fight them. Steal things of them. Call them names. Silks, Pigs."
63. "Treated girls rough. Did dirty things to them."
64. "Used to hit the girls. Pick on them. Get in fights with them. Plague them. Call them names."
65. "Never had anything to do with them."
66. "Never had any girls round where we were. Never had anything to do with them."

Activities of the Gang. The activities of boys in gangs are many and varied, and are hard to classify. They include the play, predatory (stealing), fighting, migratory, social and work activities. The play activities of games are classified as games which demand much co-operation and games which demand

little or no co-operation. Baseball, football and hockey belong to the first class, while the running games, swimming and skating demanding little co-operation are placed in the second class.

Games Demanding Co-operation. Out of the sixty-six gangs, fifty-three have records of games demanding much co-operation. Baseball is the most popular game. Fifty-one out of the fifty-three mentioning baseball; football stands second, thirty-six mention football, nine hockey, nine basket ball and six cricket. Baseball and football are without question the two most prominent games of the gang. Not only are they mentioned by the great majority of the boys but they are given the first place in their long list of games. Baseball was mentioned first by twenty-seven and second by fifteen; football, first by four, second by eleven and third by nine.

Many other activities in the gang life demand co-operation. The stealing activities are often definitely planned and one boy watches while the others steal, one boy engages the attention of the storekeeper while the other fellow takes things, or one boy plagues a man to get chased and another boy takes the man's goods while he is pursuing the boy. Fighting between gangs demands very active and courageous co-operation.

Games Without much Co-operation. 102 running games are recorded in the sixty-six gangs. Tag was played by 21; Hide and Seek by 14; Relievo by 12; Hoist the Sail by 8; Chase by 8; Run Sheep Run by 5; Leap-frog by 5; Kick the Can (bar) (wicket) by 4; Bull (deer) in the Ring by 4; Puss in the Corner by 2; Detective by 2. Hare and Hounds 2; Fox and Geese; Wolf; Lion's Den; Hit the Bear. How many Miles to Bareberry? Cops, Blind Man's Bluff, Throw the Stick, Fire, Stump the Leader, Hill-dill, Snap the Whip, and Duck on the Rock. Policemen were each mentioned once.

By these records it is plain that the running games form a very prominent part of the gang life. In games such as Relievo, Prisoner's Bar, Run Sheep Run, where sides are chosen, there is some co-operation; but these games are mainly individualistic rather than co-operative. The individual is not compelled to sacrifice himself for the sake of the group.

Other Activities Without much Co-operation.. Of the sixty-six gangs swimming was mentioned by 45; Skating by 20; Coasting by 12; Snowballing by 7; Jumping, jump rope, by 5; Boxing by 3; Gymnasium by 3; Jumping cars and pungs by 3; Punching bag by 2; Bicycle riding by 2; Quoits by 2; Throwing rocks by 1; Driving horse by 1; Climbing by 1.

Swimming is almost as natural for a boy as for a fish. During the summer months a boy wants to be in the water every day and sometimes three or four times a day. Forty-five out of

sixty-six boys mention swimming as one of their sports. Twenty mention skating, twelve coasting, and seven snowballing. These are forms of activities which are social but demand no co-operation.

Predatory Activities. Under this head are placed the answers to the questions: "Did you steal? What? Where?" The following illustrate their character:

4. "Go to Worcester market. Steal apples, candy, grapes and peanuts. Went in a crowd."
5. "Stole pigeons. Broke into slot machines. Get lager beer Saturday nights off beer teams."
6. "Stole most anything they could get their hands on. Fruit from fruit stands, ice cream at picnics. Robbed a store and put it in an old barn, revolvers, knives, cartridges."
8. "At night wait and rob beer teams. Stole wine, beer, and a jug of gin."
9. "Steal cherries and any kind of fruit. Go into orchards and take them. Stole most anything we wanted."
10. "Broke into a freight train. Got tobacco, sold it to teamsters. Take waste out of hot boxes and have it for a torch."
12. "Went to Cottage Farms on freight after apples and pears. Got chased by mounted police."
19. "Stole money to go to shows."
20. "Hit a Sheeney. He drop his bag, another fellow take it. Get money in meat stores. Rob milk teams. Steal ice and sell it."
24. "Steal anything we could get hold of that is good. Steal it and keep it at club rooms."
27. "Steal coal to sell it to get money to go to theatre."
31. "Broke into store and then run away from home."
32. "Steal money out of tills of stores. Stole money. Would break in at places."
33. "Steal bananas off banana teams, apples, pears, and grapes from H—'s field.
34. "Steal off farmers' teams. Steal fruit off fruit stands. Steal coal and wood. Break and enter a bakery.
42. "Go after peaches, get the chase. Steal baskets and hide them. Steal iron and sell it."
44. "Broke and entered a bakery, fruit stands, and grocery stores."
46. "Steal ragman's bottles and sell them over again. Go into store and ask a cross-eyed man for something. He would go after it, then steal his stuff. Steal bicycles."
50. Sundays we used to go stealing apples and pears."
51. "Steal coal and wood and bring them down and build fires. Steal anything we could get hold of off fruit stands. Steal stuff off of farmers coming into city."
56. "Break into school building. Steal off from Baker wagon."
57. "Stole brass pipe and copper. Break and enter store. Stole candy. Went in after money. Stole fruit out of orchards. Got some off of fruit stands."
58. "Go into department store, steal air gun, base ball, foot ball. Stole apples."
60. "Go round stealing for fun. Go out to Arlington Heights for apples, pears and things. Take bananas off of Italians. Steal off bakers' teams. Take basket of doughnuts and pies. Take milk out of doorways. Steal clothes off of clothes line sell to ragman. Stole junk, sold it to another ragman."

64. "One fellow would steal while the other was buying things."
65. "Stole a watch."
66. "Get ice, steal it and sell it. Steal bottles and barrels and sell them.

There are forty-nine records of stealing in the sixty-six gangs. This rough classification is made. *First*, things stolen to eat and drink, including fruit, cakes, candy, beer, and milk. In this class are thirty records. *Second*, things stolen to play with and use, including air gun, balls, watches, knives, revolver, and hammer. There are seven records. *Third*, things stolen to sell, including tobacco, rags, ice, coal, wood, gloves, candy, fruit, iron, lead, brass, copper, bottles, and clothes. Fourteen records.

Over half of the records of stealing are for something to eat; fruit is found in twenty-five of the thirty records. These thefts may properly be called petty larceny. The records of stealing iron, lead, coal, wood, etc., to sell, are more serious, and the stealing of watches, revolvers, and knives to keep and use, seems still more serious. There are nine records of breaking and entering houses, cars, and stores.

The entire records show that the predatory habit is very strong in the boys in the gang, and in its mildest form is seen in the stealing of fruit, and in more serious forms in highway robbery and breaking and entering.

Fighting Activities. The boys were very free in answers to the questions, 'Did you have any fights? What for?'

1. "Make forts. Fight with snowballs. Go down to East End. Fight with a crowd there. Fight with fists."
2. "Fight with a crowd of French boys. Throw stones. Fight with air rifles."
3. "Used to make forts in field and have fights between ourselves. Put up fights with boys outside the crowd. If a fellow said he was going to leave give him a licking."
4. "Fought with another gang to see which was strongest. Fought with clubs."
8. "Used to go out fighting Saturday afternoons with mill companies."
12. "Have battle with snowballs. Had fights among ourselves over *out* and *not out*."
14. "Fight if any one swore about mother. Fight among ourselves over ball games."
16. "Used to fight Bleachery gang with fists."
20. "Some of them fight. One fellow think he can lick the other fellows, he think he can't so they start a scrap."
28. "Fight at any one who would swear at me. Had a shanty in the woods, other boys would come and tear it down, had a fight over it."
31. "Fight with Allen St. gang when they would squeal on us."
32. "Sometimes a fight among ourselves. On June 17 have fight with another crowd."
36. Chelsea gangs fought East Boston gang. Everybody thought that East Boston fellows were picking on little fellows in Chelsea too much. We had it all arranged but there was a traitor in our camp, he

told East Bostons. We met in middle of ice in Mystic River, fought with clubs, sticks and stones, about four hundred of us boys, same number on other side. We licked. One of our fellows got knocked out. Half of us got hit on the arms. The ice broke in on the river. A lot of our fellows pulled the others out. We did n't like to see them drown. One fellow on the other side got drown, a little fellow. In close quarters where we could n't use clubs used our fists.

37. "One fight with another crowd at a rally between two schools."

39. "Start a fight with a big fellow then all pitch in and fight him."

41. "Had a fight with Lawrence St. gang. Have fights among ourselves, general occasion. Put two fellows together."

42. "Had a fight with Elm St. gang, and Lawrence toughs. Fought over possession of a certain street."

46. "A fellow would n't share up so fought him."

47. "Build forts, fight with other gangs with snowballs. Fight with French boys who plagued my brother."

54. "Fight with High and Water St. gangs if they touched one of our gang. Fight with fists."

55. "Had a regular battle with Sewall St. gang. Make a fort on a hill. Sewall St. tried to take the fort on us. We pelted them with snowballs. They took it once at seven o'clock while we were eating breakfast. We drove them out over a fence."

56. "Fellows hit me with a brick. He knocked me down and I did the same."

57. "Fight about calling names."

58. "Met E—. We were coming home from football game. Guyed them for beating. Fired sticks on us. We made swords of wood, got an air rifle, made an attack on them and drove them up on a haymow in a barn."

59. "Polanders used to throw bricks at us. Had stone fights. One of our fellows got a finger cut off. One of their fellows nearly got killed."

60. "Our gang from our school fought a gang from another school. Fought with sticks and stones. Chased fellows on streets. Split a few boys' heads open."

There are records of fighting in forty-six of the sixty-six gangs. Twenty-two gang fights, six fights on sides in the gang, eighteen individual fights inside the gang, three fights picked up with a boy outside the gang, and one record where a group of gangs fought another group.

The gang fights were for the following reasons: for the fun of it, to see which was strongest, pick up a fight by guying other crowd, pick up a fight by throwing stones, for the possession of a street, for the possession of a fort, over tearing down a shanty, the other gang squealed on them, plagued my brother, touched one of our fellows, jealousy between gang of different schools, arranged for a fight the 17th of June. The group of gangs fought the other group because the small boys were imposed on. When the boys fought among themselves they chose sides and had battles with forts and snowballs. It is a common custom in the winter for boys of one crowd to divide for battles with snowballs.

The gang fights were fought with fists in three cases, snow-

balls in three more, stones in one, bricks and stones in one, air rifles and stones, and air rifles and wooden swords.

The individual fights arose over disputes in baseball in four cases, because boys did not divy up in three more; swearing about mother, swearing at me, calling names, money not paid back, put fellows together to fight and to see which was best fellow.

Fighting is a very prominent and important part of the gang life. The reasons given are sufficient, for boys at least, for a fight, and when the boys cannot find a good reason they guy or throw stones at the other crowd and thus give them a good reason.

It is thought by many trainers of boys that fighting is bad and should be universally condemned. But the boy who is taught not to fight when he is being imposed upon is trained to be a coward; and it is a safe inference that fighting develops physical courage, from which the highest kind of courage, moral courage is later developed. The gang fight is based on loyalty and demands the highest kind of co-operation.

Migratory Activities. These reports are in answer to the question: 'Did you go off anywhere?'

4. "From Worcester go to Tatnuck Sunday afternoons. Jump freights, other days, and go to Springfield and Pittsfield. Stayed out one or two nights. Ran away from home to Burlington, Vt. Stayed there two weeks."

5. "Go around in city of Boston. Wander around streets. Go to Revere Beach. Jump freights. Go down to freight yards. Go to Medford Hillside. Stay out nights."

6. "Sometimes went on a trip in the country on Sundays from Waltham. Catch a freight go to Wayland and Littleton. Went to Boston to shows and circuses."

12. "Take a car, go to City Point just for a little ride. Nice and breezy in cars. Go to Cottage Farms on freight from Somerville. Got back same night about one o'clock."

16. "Go off for a trip on Sunday (from Boston). Go out to Arlington, Waverly Oaks and Wayside Inn. Went to Portland, Me. Had a tent in woods for one month."

20. "Go out to Fair Beach from Boston. Jump freights. Was going to New York. Stopped at Worcester. Went back, was arrested at South Framingham."

26. "Sundays took walks to Lynn Woods and Breeds Pond. Some saved up money and went to Lewiston Fair in Maine. Some went to Boston to ball games."

28. "Go to Pittsfield to shows (from North Adams). Go on trolleys. Jump freights to Springfield, Worcester."

31. "Broke into a store and then ran away from home, so we would n't get caught. Went to Boston (from Newburyport) on freight. Stayed at Hawkins Street Home one night. Went to Worcester on freight. Stopped in a Park and Salvation Army in Worcester. Walked to Northboro to sisters. Stayed a couple of days. Went to Walpole and then back to Marlboro and was caught. We planned to go to Bangor, Me."

32. "Walked around streets. Stay out nights on the streets. Sleep

in barns. Go Sundays off to Charlestown and to fields out in Newton toward Norumbega Park. Go off to Boston for a day or two. Go round "North End gang."

33. "Sundays go down to the fort, go over to the Neck (Marblehead), go over to Lawrence woods on picnics, four or five miles."

43. "Stay out all night. Go off to different cities on freights. Went to Portland, Me., five or six times (from Boston). Stayed a week once. Went to Newburyport twice. Stopped one day each time. Went to Andover six times, stayed two weeks. Went to Exeter five or six times, stopped three or four days. Went to St. John, N. B. Got a job in steam laundry. Save up money and then go off for a good time. Go to Boston Saturday afternoons (from Lawrence)."

55. "Sundays went off bicycle riding out to Forest Hills. Stop at Jamaica Pond. Ran away to Worcester, stayed two weeks. Stayed out half a month nights."

57. "Take a ride out to Waverly or some other place Sundays. Went to Nashua, N. H., to get a job and came back again. Ran away from home to N. Y. with another boy. He paid the bills. Stayed there three months."

60. "Stay out nights three months to a time. Stay in cellars, freight cars and entries. Sundays go out to Dorchester and Arlington Heights to get apples and pears. Reason for staying out was the cops were after me. Jump freights to Readville and Providence. Get off, come right back."

62. "Stay out nights. Go in back yards and sleep. Ran away to Boston. Walked. Took four days. Got arrested there."

66. "Go to Newton and Arlington on bicycles. Go down to Apple Island in a boat. Stay out nights, stayed in paper office on Washington St. Lots of boys get there at one and two o'clock for their papers. When woke up say 'I am waiting for the papers.' Ran away from home several times. Get as far as Wellesley turn round and come back at night, say we would try it some other time."

There are forty-four records of the travel of boys. Some went only a little and others went much. Twenty-three records are of different boys jumping freights to go to other towns and cities. Some boys went but once or twice while others went twenty times in this way. Some went only to the next city while others went to Burlington, Vt., Portland, Me., New York and St. John, N. B.

There are three records of boys walking off to other places and four who paid their way on the cars. This makes thirty records of boys going to distant places. Fourteen records are of boys deliberately running and staying away from home, sixteen reports of boys staying out nights.

These accounts show that the travelling or migratory instinct is very strong in boys. As a rule they do not go away in large companies but by twos or threes. The custom of going off Sundays out into the country to some pond or woods is very prominent.

Savage Games and Occupations. These reports come in answer to the questions:—'What do you do for fun? Did you go off anywhere? What did you do Sundays?'

1. "Played Indians in the woods. Go fishing after perch and pickerel. Go berrying. Get a pail full, then eat them."
6. "Go fishing and shooting. Each of us had a gun. Played cards in the woods. Met out in the woods back of an old barn. Sunday went on a trip in the country."
7. "Went camping out. Stay for a day or two. Made a boat. Went boating, fishing for perch and pickerel."
15. "Go fishing. Had a tent in woods, for one month. Went boating."
26. "Go fishing. Go to woods on Sundays, to Breed's Pond. Build bonfires. Went hunting."
28. "Went fishing for pickerel and perch. Went hunting for gray squirrels, pheasants, quails, rabbits, foxes. Shot three foxes, one silver fox. Had a shanty in woods."
31. "Make boats and rafts to hold ten or twelve fellows. Twenty-three of us hired a tent for five days in woods in Salisbury."
46. "Went up to Cannibal Lake. Went boating. Go into woods on Sundays. Go fishing and hunting. Two boys had guns. Go shooting birds and bull's eye."
51. "Had rifles. Go hunting after birds in the woods. Had sling shots to kill sparrows."
52. "Play Harry Tracy. Two or three of us run, two or three detectives try to catch us. Use sticks for pistols."
58. "Play Indians. Make up two parties. One party captures others and put them in a hole. Met in a shanty or club house in the woods."
59. "Had a tent, a dug-out, a quarter of a mile out in the woods. Stayed out five nights. Slept in a barn. Two other fellows stayed away from home with me."
65. "Hire a boat Sundays and go down to Apple Island. Go fishing."

Under this head I have placed hunting, fishing, boating, building tents, camping out, going into woods, playing Indians, etc. Under this topic might well be placed the fighting, migratory, and predatory activities, for they are the occupations of savages.

There are thirty records of boys going into country to pond or woods, to hunt, fish, camp out, get nuts, fruit, etc. Sixteen went fishing, eight camping out, seven hunting, and eleven boating. There are seven records of boys meeting in a shed, dug-out or tent in the woods. For city boys these records show a strong tendency to get to ponds and into the woods and engage in the occupations of savage life.

Plaguing People. These responses came partly in answer to the question, 'What did you do for fun?' and partly in answer to the direct questions: 'Did you ever plague anybody? How?'

2. "Rap on doors. Push and pull people. Play tick tack on windows."
4. "Put wires across sidewalks to trip people."
8. "Throw eggs at people. Open doors of Chinamen and throw stones at them. Tie dead rats on coats of people."
20. "Have a dead rat. Throw it at a Chinaman. Fire things at men

to get the chase. Hit men out of doorways to get the chase. Put a rock in paper bag for men to kick. Hit a Sheeney. He drop his bag another fellow take it."

24 "Cabbage stump night. Take cabbage stump. Bang doors at night. Gate-night. Pull of the gates. Door-bell night. Tie long strings on door bell, ring it. Press buttons. Put pins in them."

25. "Pile things up at doors. Trip up drunks."

29. "Bang rocks at Chinamen. Go into stores and throw things around."

31. "Ten or twelve went breaking windows."

36. "Mock a policeman on duty. When he would turn his back hoot at him."

39. "Tie a rope across the street and trip people up. Throw eggs at people. Throw cabbages at people. Ring door bells. Break windows, electric lights. Plague Chinamen. Bring them in a bundle of paper. Throw potatoes at Chinamen."

40. "Plague people. Throw things at Jews. Throw snowballs at Jews. Ring door bells. Call Chinamen names, as rats, rub your teeth at them."

42. "Call person names to get the chase. Throw eggs in at Chinamen's doors. Plague policemen."

43. "Plagued the ragman. Upset his cart and run away with the rags. Ran away with the banana team."

46. "Dump ragman's cart over bank. Shoot at them with air rifles. Go into store, ask a cross-eyed man something. He would go after it, steal his stuff."

50. "Call women names. Tie strings to two posts when man would walk by knock off his hat. Plug potatoes at anybody. Hold up a ragman, take his money. Did n't fight but always insult another crowd when it came by."

51. "Go down near an iceman just to plague him. Tipped over a ragman's cart almost killed him. Burn the door on the Chinamen. Go out and plague farmers. Throw bricks at a man's horse."

52. "Plug snowballs at Jews because they are so funny. Tie strings to corners. Throw stones thro' window. Plug bricks at people."

53. Rap on Mr. G—'s door. Get something to hit every ragman you see. Run down into C—'s cellar."

54. "Plague policemen. Shoot beans and pebbles down on him if he touched one of our fellows."

56. "Throw bricks at Sheeney for fun."

57. "Plagued Chinamen. Called them names. Plagued Jews. Holloed what he would hollo."

59. "Go around banging doors and breaking windows. Went into the brickyard to get chased by the man there."

60. "Plague Jews and Italians. Tip the rag teams of Jews over, take the rags and sell to some other Jew."

63. "Play tick tack, pull blinds off of windows, smash doors of Jews."

64. "Go round in woodyard, throw wood in street to get the chase from an old man, Mr. B."

65. "Pull rag bag off of ragman and then run."

66. "Make a fire, get bricks hot, then throw them at Chinamen's door. Put pins in door bells. Throw corn cobs and potatoes at people."

There are forty-four records of this kind of activity with fifty-nine different instances classified as follows:

Tick tack, rap on doors, ring bells, take off gates 17; Call

people names, saucy, 7; Destruction of property, break windows, doors, etc., 7; Push, pull and trip people 6; Throw things at people, snowballs, potatoes, eggs, rats, stones, etc., 18; Robbing, tip over cart and steal 4.

The ringing of door bells and playing tick tack is not necessarily very serious; for it may be done as much for fun as for doing something for bothering other persons. The calling of names is more serious and the destruction of property in breaking windows and doors is still more so. There are twenty-eight records left which are personal, and are very serious forms of plaguing people.

This form of activity arises for many purposes. The boy often wants to have some fun and he takes this way of getting it. A boy likes to smash and break up things. He likes to tease and bother people. It shows a lack of sympathy for the other fellow, but this is one of the prominent traits of the growing boy.

Work. By the boys' own reports we find that there were frequently loafers in the gang, and quite a few boys who ran on errands, did odd jobs, and picked over the dump. The majority were at regular work or at school. The boys seem to think that going to school means that a boy is not expected to work. I would ask if any of the boys worked and the reply would be, "They go to school." There are a few very interesting answers where the boys report that they worked for a while, then stopped and spent the money earned. In another case the boy who worked went home at night and did not go stealing while the others did. Concrete reports follow.

"Nearly all worked. Three of us did n't work. Get money from junk."

6. "Some worked in mill, some on farms, some at odd jobs. Work for two or three days and then lay off and spend money."

8. "Four out of the seven worked. I worked once in a while."

13. "Get money from picking rags and bottles."

14. "Four went to school, four at work in shoe shop, three loafing."

20. "Four worked, one loafed. Three worked in barrel factory, one fellow ran on errands."

24. "Peddle bills for shows. Help men unload things at Express Office."

26. "Most at work in shoe factory and electric lights. One or two loafers. Five went to school."

29. "Clean horse for a man and got twenty-five cents."

32. "Three worked. They would go in at night and not steal. Four loafers. Three or four would go stealing."

38. "Five or six worked over to News Bureau. Stay till they got fired. Five loafers now."

39. None at work. Go to school. Stay away from school."

42. "Three of us worked, three went around getting junk to sell."

46. "I only worked. Rest went to school. Get junk out of dump. Sell it."

47. "One worked rest go to school. Get money selling papers, running errands, picking over dump."

52. "I worked blacked shoes. All rest went to school."

Theatre, Cards, Smoking, Drinking. There are records of going to theatre in 38 gangs; of playing cards in 25 (Forty-five 10, Whist 7, Pitch 7, High Low Jack 6, Casino 4, Polka 3, Old Maid 1, Everlasting 1, Barn-yard 1); of gambling in 12; of smoking in 30; of drinking in 9.

Boys are very fond of going to shows. It is one of their strongest passions. They will do anything to go: pick over dump, peddle bills, steal money or steal their way in. They are bound to get there someway. Thirty-eight out of sixty-six boys went to shows. They do not as a rule go in gangs but in companies of twos and threes.

Twenty-five out of sixty-six gangs report card playing; twelve, gambling.

There are records of smoking in thirty gangs and of drinking in nine. The records do not claim to be complete; if they were smoking would probably be found in nearly all and drinking in a few more. Drinking is not, I think, common in boys' gangs.

SUMMARY OF ACTIVITIES.

Athletics.	Games of co-operation	in 45 gangs.
	" " running	" 31 "
	Swimming	" 42 "
	Skating	" 22 "
Fighting		" 45 "
Predatory Activities		" 43 "
Plaguing People		" 45 "
Migratory Activities		" 41 "
Savage games and occupations		" 49 "
Going to theatre or shows		" 36 "
Playing cards		" 26 "
Smoking		" 23 "

The records show that the activities of a gang are varied and significant. The gang has its existence for the purpose of doing something. Athletics including baseball, football, the running games, swimming and skating forms by far the larger part of the activities. Play and fun is therefore the main purpose of the gang. Fighting, stealing, travelling, plaguing people and going to shows, fills out a very attractive and interesting programme for the gang's day or week.

Genesis of the Gang. If the gang is and will continue to be one of the important institutions of American boy life it is interesting to note how far the records give us any light concerning its genesis.

We have observed from Sheldon's study that the prominent period of the gang in a boy's life is from ten to fifteen, the

time of change from childhood to adolescence. Man is a social animal; and at this period the social instinct is beginning to assert itself and and control the boy's life. The fact that at the dawning of adolescence boys are eager to associate in gangs shows that there is a growing desire for the satisfaction of this instinct, that the boy's nature demands companionship.

The growth of the social instinct is also seen in the games played. In infancy the plays are individualistic, in childhood the plays begin to be social, but "the centre of interest is one's self in relation to others;" in adolescence the play reaches a higher social level, and the games "involve not merely the sub-ordination of self and the elevation of the group; but the pursuit of a distant end by means of definite steps." (7).

Most persons like to associate with other persons who are passing through experiences similar to their own. We associate with persons who are like ourselves. For the same reason, the boy desires to associate with beings like himself. He therefore likes to be with boys of about his own age and after a short acquaintance they begin to have a feeling of sympathy for each other, and unite informally into a gang.

The gang period is the time when a boy is learning himself.

> "But as he grows he gathers much,
> And learns the use of 'I' and 'me,'
> And finds I am not what I see,
> And other than the things I touch."

When the boy is coming to the realization of himself he has not much independence, uor confidence in himself. He needs some one to lean on. His boy companions afford the sufficient prop for his lack. Jacob A. Riis likens the boy of this period to a wolf. "His instincts of ferocity are those of the wolf rather than the tiger. It is only when he hunts with the pack that he is dangerous." (11)

These records and our daily observations show that the activity of boys at this period is prodigious. The normal boy is full of energy and there must be opportunity for its expenditure. Enforced inactivity is simply punishment. At home and at school the boy is required to keep quiet. The street and the gang afford about the only opportunity for free activity to the city boy. The gang therefore naturally arises from the instinct of activity which is so prominent in the boy's life.

Many of the activities of boys to which we are inclined to ascribe an evil motive arise solely from the desire to be doing something. When boys throw things at people and pull their coats, they do it not alone for the sake of bothering people, but for the purpose of getting the chase. Judge Lindsey (10) says, "In my experience nine-tenths of such offenses (against civil authority) are rather the result of misdirected energy,

thoughtlessness, and a certain uncurbed exuberance which is the part of the life of every boy."

The records show that the boy of this period has a strong instinct to fight. The struggle for existence has tended to select the men who are the best fighters. This passion seems to be stronger in youth than in later life and apparently is normal. The very slightest offense will arouse this combative instinct. If offenses do not arise there are times when the boy will do his part to cause them. The gang affords opportunities for personal fights and also for gang fights.

The boys show a strong instinct to roam. "The emotional restless disposition which is so closely associated with rapid and uneven growth, the new sense of power, and of self-life, and dreams of adventure, is often manifested in a craving to roam, to run away from home, to go to sea." (8) The parents of the boys have reached the stage where the home instinct is stronger than the roaming instinct. Moreover most parents are so confined by their work that they have no opportunity to go with their boys to satisfy this craving. The only avenue left open to the boy is the street and companions who have like inclinations. Thus the gang satisfies another strong instinct of the boy's life.

Again the instinct of curiosity is very strong in youth and is never fully outgrown. The boy is just learning about himself and the world. He desires to know the reasons for everything. He is fond of new experiences. "Youth loves intense states of mind and is passionately fond of excitement." (8) The experiences of the home become old and monotonous. The school work also has too much sameness and the daily routine becomes wearisome. The street and a crowd of enthusiastic companions affords the best opportunity for the satisfaction of his life.

It looks very much as though the boy had an instinct to steal. The records of these boys surely indicate this. It is easy to say that they are abnormal in this respect, but does not this instinct exist to a greater or less extent in the life of every normal boy. The careful training of wise parents may check it in very early years, but the boy without restraint is not thus saved. Who that is honest and not so pious that he has erased the past can fail to remember that the passion to steal was once a part of his own life. It is true that many boys enjoy a thing more if they can steal it, than they do to receive it in a formal lawful way. The association in a crowd affords the best kind of an opportunity for the development and satisfaction of the predatory instinct.

The gang therefore arises from the following instinctive tendencies of a boy's life,—the social instinct, feelings of depend-

ence, the instinct of activity or workmanship, the combative instinct, the instinct to roam, the instinct to learn, the love of excitement, and the predatory instinct.

Gang like a Savage Tribe. The boy is very commonly called a young savage. Warner (14) says "Any boy who is good for anything is a natural savage." "The child," says Ellis, (4) "is naturally by his organization, nearer to the animal, to the savage, to the criminal than the adult." If this view of the boy is truth rather than fiction it may be helpful in the understanding and education of the boy. "Without knowing them (savages) and their ways," says Pres. Hall, "we cannot understand children, religion or education, our own earlier history or that of our institutions." (8)

The boy's gang seems to have many points in common with a savage tribe. As Gulick says: "Savages who have reached the stage of co-operation under a chief, of fighting in organized groups, are doing that which the Anglo-Saxon boy commences to do soon after he is twelve."

Most savage tribes migrate. They wander from place to place. They are ever in search of better lands. There are records in thirty of our sixty-six gangs where the boys jumped freights, walked or paid their way to distant places. In fourteen cases the boys deliberately ran away from home. "At the dawn of adolescence the impulse to migrate or wander shows a sudden increase." (8)

Savages live in dug-outs, tents and rude houses. The boys show a great love for out-door life and wild rude life. The meeting place of a boy's gang is generally on the street. Very few show any inclination to go into well furnished rooms even in winter. There are but seven records of gangs meeting in a house or club room; but there are twelve records of the meeting place in tents, sheds, attic, and dug-out. At the Springfield Training School twenty-two students relate that they built shanties in the woods, or had their meeting place in a barn or hen coop. (1) Country boys have a better opportunity to show the tent building instinct, and at the gang period nearly all have a tent secreted in the woods. Savages obtain their living by hunting, fishing, grazing, and simple agriculture. The records indicate that boys have a strong passion at the gang age to enter into these first hand relations with nature. We have seen that thieving, plundering, pillaging, fighting, and the like, are common in the boy's gang as well as in the savage tribe.

Savages are cruel, and maltreatment of persons outside of their own tribe is admired. "Most savages are utterly indifferent to the sufferings of strangers or even delight in witnessing them." (3) The boy does not fall behind the savage

in the unkind treatment of strangers. The numerous records of the maltreatment of Jews and Chinese by the gangs shows the display of this tendency. To attack and misuse a strange boy who appears in the gang's precincts is also considered the proper thing. The boys get their pleasure by giving displeasure to others. This shows a great lack of sympathy and cruelty arises from this.

The savage tribe has the sense of possession of the territory which they occupy and will fight to hold it. The boy's gang likewise has a feeling of ownership of their meeting place and the district from which the boys come. The same spirit is reported at the McDonough School. "Among the McDonough boys, as among many savage societies, the beginnings of property in land is seen as the collective ownership of the soil by groups of persons." (9)

The leader of a savage tribe gains his position by physical prowess and a record for courage and ability in fighting. The leader of a boy's gang gets his position in the same way. The boys like as their leader the oldest, largest, smartest, good-natured fellow, who is the best player and best fighter. The boy with these traits of character naturally takes his place as leader.

The less civilized a people the more informal are their methods of procedure in selecting officers, or making laws and customs. The gang is thoroughly informal. The boys meet because they chance to be in the same neighborhood. A boy comes into the gang by common consent and goes out because public opinion is against him. The leader takes his place because he wants to lead and the boys want him to lead. There are no written rules and rarely is anything done in any formal way.

The virtues most admired in the savage tribe and the gang are the same. Courage is placed by both in the highest rank because the man or boy with it is of the greatest service and is most faithful to his tribe or gang. Truthfulness, fidelity, and loyalty to the tribe were necessary for the tribe's existence and therefore were greatly admired.

We find that the possession of these virtues are the conditions upon which a boy is admitted or expelled from the gang. Loyalty is the leading unwritten rule in the gang's code of laws. No other institution insists so strongly upon this virtue.

The self regarding virtues of chastity and temperance have never been esteemed by savages. In the gang records we find no reference to them. But six of the fifty-one rules have any reference to the morality of the individual. On the other hand treachery and cowardice are intensely hated by both tribe and gang.

The similarity of the gang to the savage tribe is so evident that no comment is necessary. One does not have to select or exclude any part of the records to find the parallelism.

Virtues and Vices Cultivated by the Gang. The gang is a democratic institution and therefore cultivates a free social life. No nationality is excluded. Jews are not found, but the Jews are the persons who keep themselves aloof and do not mix freely with boys of other races. Later in life man becomes undemocratic. He chooses a clique of about his own wealth or culture; but the boys make no such distinction. I asked several questions along this line and found only one or two who stated any dislikes; but most said "anybody could come in."

The gang life tends to develop a strong physique. The very purpose of the gang is to do something. The games and plays represent a great amount of activity and develop physical power and endurance. The migratory activities, hunting, fishing, skating, swimming, running games and the co-operative games of football and baseball develop the large muscles which control the fundamental movements of the body.

The gang life also develops courage. The games of football and baseball demand courage. The boy without courage dare not stand up to the bat against the boys who throw swift balls, and the fellow who is afraid to get his shins kicked or a bloody nose has no place in football or in the gang. The boy who is afraid to fight is a social outcast. In twenty-three instances there were regular gang fights. These fights call forth a very high degree of courage. The little fellow must stand his ground against the big fellow and fight.

The gang teaches the rudimentary elements of justice. Thirty-four of the unwritten rules stand for loyalty. The virtue of loyalty is based upon justice. "I stand by you, you should stand by me." Eight rules are directly concerned with justice, and three of these stand for a very high kind of justice.

It teaches also the subordination of oneself to the crowd. The fellow who thinks he is going to have his own way in the gang will be disappointed. The leader himself rules more by suggestion than by bossing and he finds that he cannot always have his own way. Here then begins the social virtue of regard for others.

The gang puts foremost the virtue of fidelity and loyalty. The boys find out whether they can trust a fellow before they let him in. They pledge themselves never to tell on the other fellow. One who does tell is immediately expelled from the gang. There is no institution on earth which can take its place beside the gang for the cultivation of this virtue of loyalty to the group. The church is often noted for its opposite tendency. In secret societies there are members who will betray their fel-

lows, but it is rare that a member of any length of standing in the gang will go back on his companions.

The gang life cultivates the virtue of obedience to a leader. The boy who will not obey the captain cannot play the group games. It develops also another of the highest virtues, self-sacrifice. No boy can enter into the co-operative games without the spirit of self-sacrifice. Baseball and football are impossible without this spirit. When it comes to a gang fight, then is the call for a heroic self-sacrifice. The fight is not for personal ends but for the honor of the gang. There is one record where the gangs of one section of the city united in a general fight against the gangs of another section, for the general good of the community, namely, the protection of the smaller boys. On the other hand the gang cultivates lawlessness. The boy has not reached the stage when he can be left free to his own impulses. As we have seen the lawless impulses are prominent. When a number of boys with the same impulses get together, away from the restraint of any older person, there are sure to develop bad tendencies. The policemen, Chinamen and Jews can bear good testimony to this statement. The records show this beyond dispute. The two directions in which lawlessness develops are stealing and plaguing people.

The gang does not develop chastity but rather its opposite. The boy of the gang is not noted for cleanliness of talk. Most boys, and the majority of men for that matter, are not very chaste in their conversation. The first suggestions of impurity are often received from the men who gather in stores and saloons and as they meet in their daily occupations. No boy has to search for impure thoughts, they are forced upon him. He does not acquire in his home or at school a wholesome attitude toward his own life and the life of others. And the gang receives the bad and lends a hand in continuing it.

The gang breaks to some extent the ties of home, school and church. It develops and encourages the spirit of staying out nights and running away from home. There were thirty cases of boys who went off to neighboring or distant towns. Thirteen of these state that they ran away from home. There were sixteen who stayed out nights. No doubt the association and talk of boys in gangs is responsible for a large part of these migrations from home. The list of virtues, however, far outnumbers and outweighs the vices which can be charged to the gang.

Gang and the Home. Of sixty boys studied in relation to the home, thirty-two had father and mother living (in two cases they were divorced), three had both father and mother dead, twelve had the father dead, and thirteen the mother dead. Boys without a home are in the gang most of

the time; and boys without any of the restraints of a good home, when they come together form a very lawless and tough gang. This is the reason why several boys from the same gang are often found in this school.

From the study of the boy's life in relation to the genesis of the gang it is evident that the home does not satisfy and perhaps cannot satisfy the normal demands of a boy's life. How can the majority of homes ever satisfy the demands of a boy's life? The father of the vast majority of the boys of our country belongs to the laboring class. He is away from home, allowing time for travel, some twelve hours of the day. When he returns he is tired and wishes to sit down and read, or go out into the companionship of men. He has no time or inclination to give any attention to his boy's life. The mother is busy caring for the smaller children; and the boy of the gang age is often more trouble than help and she is glad to be free of him. What other road is left open to the boy than to find life and excitement among his companions. It is true, of course, that the best place for a boy at night is in the home. The best place for the boys' gang to meet is in the kitchen or an attic of a shed. "A home without a good evening is a home without hope, and the way a boy's day ends at home is a prophecy of the way his life will end." There comes a time when the boy must enter into a world outside the home. It is an open question whether or not this acquaintance with life should begin in the gang.

Sunday is a great day either for or against the home. The boys show a disposition on this day to go off for a walk into the country; they like to go into the woods and be by the water. The boy had rather go with his parents and brothers and sisters to be alive with nature than to go with the gang. To spend a part of the Sabbath day out of doors, in God's ideal temple, seems to me as important as going to church and Sunday School, and I do not mean to underestimate the latter. Family walks and picnics on Sunday would do much to keep the boy within the influence of the home circle.

Gang and Boy's Club. The boys were asked: "What do you do nights?" In their answers nine say that they went to boy's clubs. This means a club organized and directed by adults. Two more went to Y. M. C. A. This means eleven out of sixty-six, or one out of every six, went to organizations formed by adults. Sheldon found that one out of four boys were in societies formed by adults.

It is difficult to get the boys from the tough gangs into the clubs; and if there they are not very satisfactory members. The boy's club is preferable to the gang, and at night the home is preferable to either. The ideal kind of a boy's club is a gang

guided by a sympathetic and wise man. In only one case did I find such a man leader of the gang; and in this case the boy reporting was frank enough to say that "if he had remained in that gang he would not have come to this school." It takes a very shrewd man to reach a gang. In the first place the man leader must have the characteristics admired in the boy leader. It is of no use for a man without courage and good nature and generosity to try to have anything to do with a gang. The leader must learn, like Wm. R. George, to be a member of the gang and to a certain extent to subordinate himself to the group. He can rule more by suggestion and by example than he can by domineering.

The ideal boy's club or at least the sub-division of it, for work and play should have boys of about the same age and from one locality, and be not more than ten in number. (For a thorough study of Boy's Clubs see the Boy Problem by W. B. Forbush.) (5).

Gang and the Boy's Education. A boy can be carried through this age of unrest without becoming a member of a gang or a club. It is possible to cultivate a tell-tale spirit in the boy so that he will not be acceptable as a candidate; but has not this boy missed a large part of his education?

The most valuable part of a boy's education is not what he learns from books but the elements of character learned in the home, in the school, and from his associates. The boy who gives most promise of a strong manhood, is a boy of robust activity, rough and ready, a boy who can stand a few bumps and not cry, a boy of courage, a boy with a sense of nascent justice so that he will not pick a quarrel with a smaller boy, a boy who is not afraid to fight, who is not a telltale, running to his mother or teacher with every little thing that happens, who has the spirit of loyalty to his fellow mates, who will tell the truth most of the time at least about his own deeds, a boy with pure thoughts and actions; a boy who has respect for his elders, especially the aged and unfortunate; a boy who is unselfish and will give the larger half of his apple to the other fellow. The education which develops these traits of character is worthy of the name. The training of the mind is valuable and necessary but it is nothing in comparison with an all round education in these genuine traits of character.

There is a very common tendency in educational work to set the boy at tasks no matter how dry and hard and uninteresting to fit him for the future; but the boy should enjoy his everyday life, and the more fully he lives out the present, the better he is fitted for the future. "Vigorous and complete development of each successive stage, depends upon the vigorous, complete and characteristic development of all preceding stages of life." (6)

If we accept the biological theory of life and are warranted in the conclusion that the boy of the gang period is passing through a stage in some respects comparable to that of tribal life in man's progress, then the education of a boy should have regard to the leading characteristics of this stage. "The education of the child must accord both in mode and arrangement with the education of man as historically considered." (13)

"The deep and strong cravings in the individual to revive the ancestral experiences and occupations of the race must be met in a secondary and vicarious way." (8)

Perhaps the reason why the country boy, although he has not the advantages of the best systems of book education, is proverbial for outstripping the city boy as he enters into the keen competition of the city life, is that at this gang stage he was led by his very surroundings to pass through more of the ancestral experiences. He is brought necessarily into a closer contact with nature. He is thrown more upon his own resources. He enters daily into some of the activities of primitive life.

If we were to be guided in the education of the boy by his interests we should seek first of all for much more activity in the schoolroom. Physical activity is the key note of boys' gangs and must be made the basis of the educational training; gymnastics, and out-door games, may be made instruments in reaching and holding the boy's interests, and under proper direction give the boy a valuable training. The boy who learns to be good natured in rough play, to obey accurately and promptly, to play fairly in an exciting game is on a promising road to manhood.

The gymnasium work and the out-door games can be made to appeal to the hunting instinct in games of chase, to the fighting instinct in games of contest, boxing and wrestling and to the co-operative instinct in baseball, football and basket ball.

Twenty-four boys were questioned about running away from school. They had all run away more or less. In only one case did the whole gang go. In one case the boys stated that they went in twos so that suspicion would not fall on the gang. It is plain that the boys run away from school in small companies and not in gangs.

The records show that boys run away from school to go to shows, play baseball, to go swimming or stealing, to go after nuts, and to watch men work. Eight boys say that they did not like school because they "had to learn the same things every day." "Did n't like to be in there sitting down." "Have to sit quiet as can be all day." "Have to sit in there all day." These answers suggest that the school work was monotonous. Two said that they liked school and five gave evidence that they were in trouble.

The boys love a free life. They want to have fun, to be doing something, and to be where men are doing something. They hate the monotony and inactivity of school. We cannot lay the blame for these feelings entirely on the gang. All boys with good blood feel this way. While there are only two cases of direct evidence, it is safe to infer that the gang fosters truancy.

The records of truancy given can be interpreted only as rebellion against the limitations of freedom, and unnatural methods of education. The majority of those who do not run away have the same impulses but the combined restraint of parents and school officers force them to subjection. In the spring every one who is healthy has a strong impulse to be out of doors, in the fields and woods. We "longed intensely for the utter abandon of a wilder life." These tendencies in a boy's life may be appealed to in picnics and excursions to historic places, in nature study walks, and in the camping-out school.

The boy has a raging passion for the theatre. Thirty-six boys out of the sixty-six mention going to shows. If the boy has an opportunity and a way of getting in he will go as often as opportunity presents itself. Five out of the twenty-four who were questioned about running away from school did so to go to shows. The boys often steal money and pick things out of the dump to sell in order to go to shows. Often the boys go out and try to reproduce the play. It seems from this that well selected plays might be used as a great power in the education of the boy. If simple plays could be acted out by the boys themselves, there could be no better incentive to memory work and good reading and speaking.

The boy should be led from loyalty to the gang to loyalty to a larger group. The loyalty to the gang should not be destroyed but broadened. He who has not taken the first step is not liable to take the second. A boy who is not loyal to his fellows seems to lack the fundamental virtue upon which righteousness is built. If loyalty is important and should be developed rather than destroyed, the present methods of dealing with boys are as a rule wrong. Parents and teachers often influence boys to tell on other boys. This spirit of the tale bearer is very injurious and should not be encouraged. Such a one is disloyal and lacks the very element in character which a boy most needs. Instead of fostering tale-bearing if the person who is trying to help the boys can get inside of the gang and has the confidence of the boys so that they will all come and tell their faults in one another's presence, ideal results may be obtained.

It was noted at the outset of this study that a boy will do things in the gang that he would not think of doing alone.

He should not therefore be corrected as an individual, but the whole gang should be dealt with if possible. The boy alone would not have been a thief or a burglar. The catching and punishing of one boy may sometimes effect reform, but more often it makes a hero of him and does the boy and his chums more harm than good. To deal with the gang for their good the laws of the gangs must be known and respected, and the man who begins in this way becomes a member of the gang, gains their confidence and enlists their help in stopping unlawful practices and thus the boys are led from their devotion to the gang to loyalty to a larger group and are started on the road to good citizenship. The work of Judge Lindsey, (10) of Denver, Col., and Wm. R. George, of the George Junior Republic, are good illustrations of this kind of work.

The Gang and Social Life. Is the gang an important aid in developing the social life of a boy or is he better off without it? The boy who does not learn to some extent the subordination of himself to others is always a social outcast. The member of the gang learns this lesson at the time when it is most easily acquired.

Again, courage is a social virtue, the most popular virtue which man possesses; and the man without it is despised. The activities of a gang develop this virtue in its members. The gang takes the awkwardness out of a fellow, teaches him how to give and take a joke, and gets him perhaps, too well acquainted with all sides of human nature.

It is doubtful if the boy who is brought up in the home and at school without the companionship of fellows of his own age can ever develop a normal social life. The gang or club or some kind of society where there is a liberal amount of freedom is necessary.

Mr. T. J. Browne (1) says in his study of gangs, "The boy who has gone through this stage of his existence without the discipline of the gang, without absorbing and experiencing those primitive virtues, without learning the lesson of self-subordination to the group, goes into manhood handicapped by an incomplete moral development and by a difficulty in correctly adjusting the balance between the interests of the individual and those of the group. And Pres. Hall believes that "every adolescent boy ought to belong to some club or society marked by as much secrecy as is compatible with safety. Something esoteric, mysterious, a symbolic badge, countersign, a lodge and its equipment, and perhaps other things owned in common, give a real basis for comradeship. This permits, too, the abandom of freedom in its yeasty stage, which is another deep phyletic factor of the social instinct." (8)

If a fellow enters college and has never been broken into some

gang or society, this is the time when the work of the gang may be done for him. If he becomes a member of a secret society the initiation is the time when he must subordinate himself to the group. If he has grown so old and stubborn that he will not submit to others, he fails to become a member of the group.

In the gang there is cultivated a spirit of co-operation. This is seen in the games. Fifty-five out of the sixty-six gangs were engaged in the kind of athletics which demand co-operation. Baseball and football are the two most popular games. When boys were asked what they did for fun or sport, the answers signify that these two games were the most prominent. Not only are they mentioned by this large number, but they are mentioned among the first things in the long list generally given. Ball was mentioned first by twenty-seven, second by fifteen; football was mentioned first by four, second by eleven and third by nine.

Baseball and football demand the subordination of self, obedience to a leader, and self-sacrifice. The games cannot be played on the selfish basis. Even the fights call forth courage, co-operation and great self-sacrifice as every person who has been in one can testify.

Gang and the Religious Education. The religious life is a growth and there are essential elements which should be developed before the time of the gang. Habits of obedience, honesty, courtesy and reverence are basal qualities which can be taught early in life. But the special period for religious education is adolescence.

The games and activities which call for co-operation and self-sacrifice "form the natural basis upon which a life of service to others is built." "And further it is believed that this life for others is far more probable, natural and tangible when it comes as the gradual unfolding or development of that instinct that has its first great impulse of growth in the games of adolescence." (7)

Again, loyalty is essential to a healthy religion. The man without it is a hypocrite. "The boy who is not loyal to his group seems to lack the fundamental virtue upon which righteousness is built."

Gang or no Gang. The gang arises, as has been noted, from the natural instincts of a boy's life. The main purpose of the gang is activity. These activities develop a strong physical life. The gang teaches justice, self-subordination, obedience, courage, loyalty and self-sacrifice. It develops a freedom in social life and in some ways contributes to a genuine religious life. On the other hand it develops lawlessness, unchastity, and disrespect for others. It breaks to some extent the home spirit. It is often an enemy of the school and the church.

In the light of these facts should every effort be made to keep the boy out of the gang, and suppress and exterminate the gangs as far as possible, or is the wiser course to try to direct and control them, to eliminate their defects and make use of their good points? The latter course seems to me to be the better. Judge Lindsey, who was in very close and helpful relations to the boys' gangs of Denver, Col., says: "The gang has many good qualities. Its laws and rules are founded generally on really ennobling instincts. The gang should be wisely controlled and directed rather than suppressed." (10)

The limitations of the study are apparent. The boys studied come from a certain class of society, but surely the material is very suggestive and may provoke similar studies. I do not think that the gangs of boys studied differ in their general characteristics from any other gangs of country or city. For a parallel study of boys from another class the study made by T. J. Browne (1), in the Springfield Training School, should be consulted.

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THE HYGIENE OF HOME STUDY.

By Wm. H. Burnham.

Nearly twenty years ago, on the recommendation of Gen. Francis A. Walker and others, the school board of Boston passed the following order concerning the study of arithmetic: "Home lessons in arithmetic should be given out only in exceptional cases." And in an address on the subject of arithmetic in the Boston schools, President Walker expressed the opinion,—which may fairly be taken as the view of hygienists—that arithmetic is a subject peculiarly ill-fitted for home study, and he adds:

"Over and over again have I had to send my own children, in spite of their tears and remonstrances, to bed, long after the assigned tasks had ceased to have any educational value and had become the means of nervous exhaustion and agitation, highly prejudicial to body and to mind; and I have no reason to doubt that such has been the experience of a large proportion of the parents whose children are habitually assigned home lessons in arithmetic."[1]

If one asks a body of teachers their opinion in regard to the value and place of home study, some are likely to emphasize very strongly the importance of it; others, with perhaps equal emphasis, will say there should be none of it; and a third class will reply that under certain conditions a reasonable amount is very valuable. Teachers of classics are likely to say that it is impossible to do the work of the school without home tasks; teachers of science may say that there is need of little or no outside work. Writers upon pedagogy likewise divide into similar classes. Hygienists, on the other hand, generalizing from the experience of injurious results in certain cases, are inclined to condemn the giving of home tasks altogether. All are expressing merely personal opinion based upon limited observation and experience.

This is a case where it is desirable to know the facts before laying down general rules. It does not seem a problem that lends itself easily to experimental investigation; and yet here as often the method of experiment is valuable just because it enables one to study all the facts involved. Dr. Friedrich

[1] Discussions in Education. New York, 1899, pp. 239-240.

Schmidt,[1] working under the direction of Külpe and Meumann, has made this problem a subject of experimental study, and has attempted to get to close quarters with the facts that bear upon it.

First of all, it is useless to talk about home study when there is no home. In the large cities many of the children live in tenements where study seems to be hygienically out of the question. Statistics, for example, collected a few years ago in regard to Berlin showed that there were 25,769 cellars occupied as dwellings; 3,385 dwellings on the fifth story; 343 still higher; 560 ground stories with 175 to 200 tenants each; 154 with 226 to 250 inhabitants each; 110 with 301 to 350 inhabitants each; and 6 with a still larger number of people. Further it was reported that in 205,734 rear tenements there were 19,805 rooms that could not be heated. There were 1,749 common kitchens; and 112,114 common closets; altogether in Berlin there were 6,779 dwellings without heated rooms, in which 15,273 people lived. The climax of misery was represented by 4,086 dwellings which consisted only of a kitchen. In dwellings with only one heated room the number of inhabitants was 14,100. In each of 487 of these kitchens 3 people lived; in 250, 4 people in each; in 122, 5 in each; in 56, 6 in each; in 27, 7 in each; in 7, 8 in each; in 4, 9 in each; in 1, 11; in 1, 12.[2]

In some of the large cities of this country, a few years ago at least, the conditions were often just as bad; and in many tenement districts to-day the misery is perhaps nearly or quite as great.

Many other facts must be considered. Among the factors which will influence home study are the following: the place where the parents work, whether in the home or outside; the presence of brothers and sisters; the place where the home is situated, whether on the first floor, the middle stories, or the top floor; the condition of the home, whether heated or not; the location of it in relation to the street; the conditions of light, etc.; the time of day when the home work is done; the conditions of sleep, nutrition, pauses, interruptions; the use of coffee, tea, and the like; the general social environment of the child, etc. Dr. Schmidt has considered all of these factors, and in regard to many of them collected definite statistics. For ex-

[1] Schmidt, Friedrich: Experimentelle Untersuchungen über die Hausaufgaben des Schulkindes. Sammlung von Abhandlungen zur Psychologischen Pädagogik, I, 3. Leipzig, 1904, pp. 120. See also Meumann, E.: Haus-und Schularbeit. *Die Deutsche Schule*, June, 1904, pp. 337-359. Other references will be given by numbers corresponding to the numbers of the bibliography.

[2] See Gramse, Berliner Wohnungselend und Schularbeit, Päd. Zeitung, Vol. XXXI, pp. 976-978. Also quotation by Schmidt, *op. cit.*, p. 7.

ample, in the case of pupils in his own class he found that 12% of the fathers did their work in the home; 88% outside the house; of the mothers 80% worked in the home, 20% outside the house. 35% lived on the ground floor, 2% on the top story. 45% lived in dwellings of two rooms, 6% in one room dwellings.

Dr. Schmidt tried to control the conditions in his investigation. The following method was adopted: two tasks of as nearly equal difficulty as possible were chosen, one was given to the class, to be performed in school, the other was given, to be performed at home by the same pupils. After three weeks the same two tasks were given again to the same pupils. Also the same tasks were given to another class who had not had any home work previously. All the pupils were between the ages of 12 to 13 years. They knew nothing about the experiment. To avoid the effect of practice, work in which they were already skilled was given them, and it was adapted to their apperception; both tasks were allotted for definite days or hours. The teachers made no suggestions. Thus the conditions were normal. The material from all these pupils was made the basis of the study, and not only the average but the mean variation was calculated.

For a single illustration we may take the test in arithmetic for Dr. Schmidt's own class. The home work consisted first of ordinary examples in multiplication and long division. The total number of errors was for the home work 209.69; for the school, 146.51. For the test with the repeated task in the home work 222.63; in the school work, 137.88. Again, for a second test, the total number of errors in the home work was 351.57; in the school work, 268. For the repeated test in the home work, 260.31; in the school work, 218 95. Again, for the third test with applied problems the total number of errors in the home work was 248.38; in the school work, 199.44. For the repeated work, in the home tasks, 294.95; in the school work, 160.01. Summarizing the results for all the classes it appeared:

1. That in respect to content the home tasks were strikingly inferior to the reckoning in the school. As regards form one group of the school tasks showed more errors than the corresponding home work.

2. The mean variations in content and form appeared in favor of the school work in three cases.

Still more strikingly in favor of class work were the results of the test in copying, and in general the majority of the children made more mistakes in the home work than in the school work. The errors made in the home work differ, however, from those made in the class. The value of home work is dif-

ferent for different subjects and it is different for different ages.

A most noteworthy illustration was furnished by the test of writing original essays in the mother tongue. Those pupils who worked in the solitude of their own rooms, especially in individual cases, did much better work than those who wrote in the class-rooms. This, Dr. Schmidt explains on the ground that solitude favors the activity of imagination. Probably in general with children as with adults the conditions of solitude are necessary for the best results in original thinking.

On the basis of his extended investigations, Dr. Schmidt draws the following practical conclusions:

1. The investigation in regard to the quality of the home work showed that in general this was inferior to the school work. An inference in regard to the abolition of home work cannot be drawn from this, however, since in special cases the latter was qualitatively superior to the school work. The home tasks have in themselves an incontestible value.

2. The daily preparation of home tasks should be avoided, since it is shown that this is accompanied with a tendency to routine and superficial work, while such pupils as prepare no tasks at home show in a home test both in content and form better productions, which in a typical case may even surpass the school work.

3. In city schools with instruction both in the forenoon and afternoon, home tasks should clearly be omitted. The same is true for the winter schools in the country.

4. Written home tasks in arithmetic should be omitted, since their quality is inferior.

5. In case of home essays it is indicated that when it is possible the pupils should prepare them at a time when they can work alone. Such essays prepared in quiet solitude are qualitatively better than those done in the school under the influence of the class.

6. Home tasks to be given at intervals should be derived directly from the instruction, therefore well prepared for and most carefully controlled.

Some noteworthy incidental results were found by Dr. Schmidt. The experimental method used by him gave him an intimate knowledge of the individual pupils, their manner of work, and the errors to which they were liable. In correcting the home work of the pupils he came to know them accurately as working individuals; for example, he found that one pupil of the upper class could not write one of the German letters, another regularly gave a false result in the simple multiplication table, a third had a false idea of things, conditions, and qualities. He points out that it is not without value to know

the conditions under which each individual pupil works. The insight into the home conditions of the pupil is important not only for a correct estimate of the home tasks but for the treatment of the pupil in general.

This study by Schmidt illustrates very well the advantages and the limitations of experimental pedagogy in dealing with a question of this kind. It is impossible to eliminate all the sources of error, although they are minimized by the precautions that may be taken, by having a large amount of material, and by estimating not only the average but the mean variation; and yet the application of the scientific method is specially valuable as a means of studying the many factors involved in such a problem and bringing one to close quarters with the facts. The fallacy of the practical teacher who makes light of such work is in supposing that because the psychologist by the scientific method is unable to estimate all the factors adequately, therefore, the teacher without any such method is able to estimate them all. While from a strictly scientific point of view, the results of such a study are largely unsatisfactory, from a practical point of view they are far more valuable than mere personal opinion or even the pooling of opinions based upon desultory observation. The main point for pedagogy is that the work should be done by the pupils under normal conditions.

The child studying school tasks at home is relatively isolated; in the class he is one of a social group with common aims. Studies in social psychology have shown that an individual alone and the same individual in a group are two different psychological beings. The child working alone is different from the child working in a class. Dr. Mayer, of Würzburg (8), has studied experimentally this difference as regards the ability to do school work. His problem was to determine whether and under what conditions the work of pupils in a group gave better results than the individual work of the isolated pupil. He tested the ability of pupils to work alone or in company with others, using dictation, mental arithmetic, memory tests, the combination tests after the manner of Ebbinghaus, and written arithmetic.

Dr. Mayer's method was briefly as follows: a number of boys in the 5th school year of the People's school in Würzburg were given five different tasks as class exercises, and in addition each boy was required to prepare a similar task for comparison in which he sat alone in the class-room, only the class teacher or a colleague being present. The material for the tasks was carefully chosen and was familiar to the pupils. The pupils were representative of very different elements as regards school ability, behavior, temperament, and home conditions. The whole number tested was 28, the average age 12 years.

In general the result of the work of the pupils in groups was superior to their work as individuals. This appeared not only in the decrease of time but in the superior quality of the work done. In individual cases the saving of time was specially striking; for example, one pupil for a combination test required 10 minutes and 25 seconds when working alone, for a similar test when working with a group 7 minutes and 30 seconds; another, alone 13 minutes and 11 seconds, with the group 6 minutes and 45 seconds; another, 6 minutes and 52 seconds alone, with the group 4 minutes and 40 seconds; still another, 12 minutes and 48 seconds alone, 5 minutes and 50 seconds with the group.

In another series of experiments the pupils were urged to work slowly and carefully, "*Recht schön und langsam*," and given as much time as they desired. Here the stimulus from the group seemed to be lost. In only 41% of the cases was the class work done in shorter time. In the majority of cases the isolated pupils worked more rapidly. In another series they were told to work very rapidly, *Recht rasch*. Here again, only in 40% of the cases was the time shorter for class work than for work alone.

These results did not appear from similar experiments in vacation. When the directions were to do the work rapidly and well the favorable influence of class work did not appear. Class work in vacation was not done more quickly than the individual work. Mayer's explanation is that the ambition of pupils is the cause of the increased amount of class work, and this is not as potent in vacation, as the children do not then work for examinations.

The pupil in the presence of others is influenced by suggestion. First of all is the direct suggestion from the presence of the teacher in the class-room and the consciousness of the pupils that their performance will be compared with those of other pupils; but besides this there is an indirect, unconscious suggestion, using the word in the broad sense. Wherever men are together the individual is influenced by others without being aware of it. This is specially well illustrated by certain experiments in the laboratory. Meumann cites the case of a subject whose work at night with the ergograph had a very definite value. Accidentally one day he entered the laboratory, and at once the work done was decidedly increased in comparison with that of other evenings and this without the subject's making any voluntary effort to accomplish more. In such experiments the subject always attempts to do his utmost, and hence the significance of the increased work done in the presence of another individual. Many examples of such effect of suggestion have been reported by psychologists.

Dr. Triplett (20) tested the influence of the presence of a co-worker on a simple physical performance. His subjects were 40 school children, and he had them turn a wheel as rapidly as possible. The children turned the wheel now alone and then in company with another child; in both cases with directions to turn as rapidly as possible. Two results were noted. It appeared, on the one hand, that pupils work more rapidly as soon as another child works in combination; but, on the other hand, in case of many children, hasty uncoördinated movements appeared which reduced their performance. We have to do here probably with very deep-seated and fundamental characteristics of the psycho-physical organism, on which are based the instincts of workmanship, imitation and rivalry.

Féré (2) has made an interesting investigation which throws light on the influence of suggestion on work. He found, for example, that the work with the ergograph is decreased when the subject is blindfolded, and even when the room is darkened, the light having a stimulating effect upon the worker. Again, if the subject while experimenting looks at another person who makes the same finger movement without lifting a weight, the amount of work done is increased, the second person acting as a sort of pace-maker for the subject. It is even sufficient if the subject for a time before beginning the work watches the movements of another, although if the subject watches another for too long a period before the experiment the amount of work done is decreased. The effect of such suggestive influence is stronger if the subject is in a condition of fatigue than when he is fresh. In over-fatigue, when the nervous system is in a condition of "irritable weakness" so-called, such suggestive influences have great effect upon the work. Féré compares the fatigued man with the hysteric, both showing increased sensibility and suggestibility.

Meumann (9), in experiments in the People's schools, corroborated the results of Triplett and Féré in a striking manner. Seven pupils of the age of 13 or 14 were tested repeatedly with the dynamometer and ergograph. In case of the test of the pupils separately, with no one else in the room, the amount of work was always less than when others were present. If the experiments were made in the presence of the teacher alone, the pupils did not do as much work as when they were all together without the teacher. On another day the pupils came to the test at 4 o'clock in the afternoon after the school work. It would be supposed, if we may trust the experiments made by Kemsies and others, that at this time of the day there would be a considerable decrease in the amount of work that could be done; but Meumann tried the experiment of suggestion by say-

ing to them that youth of their years ought not to be affected by a little school work, a view which they eagerly approved. As a result of the experiment, it appeared that while the two weakest of the seven pupils showed a considerably less ability to work than on occasion of an earlier morning experiment, and two others of rather slight muscular strength did not do quite as much work as before, the other boys showed quite different results, and did more work than at the earlier test. As a general result Meumann concludes that with every change in the external situation, in the co-workers present, in the suggestion given by the experimenter, the amount of work is altered in a typical manner, and these changes appear in the same way in the case of children of different ages.

From this it appears, as Mayer points out, that pupils in a class are in a sort of mental *rapport*; they hear, see, and know continually what the others are doing, and thus real class work is not a mere case of individuals working together and their performance the summation of the work of many individuals; but there is a sort of class spirit, so that in the full sense of the word one can speak of a group performance which may be compared with an individual performance. The pupils are members of a community of workers. The individual working by himself is a different person.

A noteworthy result of these investigations is the apparent immunity of children to distraction from ordinary causes. Schmidt found that the outside disturbances,—the noise from the street, from adjoining rooms, and the like, had little effect upon them. It was only interruptions that distracted their attention, such as conversation with others, that affected the quality of their work. It appeared even that a home task completed without disturbance might be poorer than the corresponding class work, and that a home task when the pupil was disturbed might be better than the class work. And from Mayer's study it appeared that the tendency to distraction is diminished rather than increased by class work.

Meumann in tests of the memory of pupils alone and when working together found similar results. Disconnected words of two syllables were used which were written down, pronounced once to the pupils, and then written down immediately by them from memory. Two groups of words,—one, substantives of concrete perceptive content familiar to all the pupils; the other, abstract nouns such as mankind, order, organ, culture, and the like were used. As a rule the class teachers pronounced the words, giving first three words, then four words, then five, then six, then seven. As soon as the series was ended the time was noted in which the quickest pupils finished the task. After the experiment was completed, Meumann took

certain individual children of the class for a repetition of the experiment alone and gave them new words similar to those used in the class. It would naturally be supposed that the children working in the class-room with all the inevitable noises and disturbances would not remember as well as when tested alone. The result of Meumann's investigation, however, was surprsing. While in case of children 13 and 14 years of age there was no essential difference in memory for the individual and the common test, the difference was remarkably large in case of the younger children, especially in case of those 8 and 9 years of age. On an average of all the tests Meumann found that when three words were given the children remembered them correctly. With 5 words 4.9 were remembered correctly. In case of 7 words 4.6. On the other hand, with the individual test, on an average all remembered 3 correctly; in case of 5 only 3.4 were remembered; in case of 7 only 3.2 of the words. Thus on an average with the individual test the children remembered considerably less than in the class. The results were so constant that not a child was found who remembered more in the individual test than in the class test. From this Meumann concludes that the great number of disturbing influences to which children are inevitably exposed in the class-room,—the noise of writing, whispering, walking about, the occasional words of the teacher, the sight of the movements of the pupils, and the like, which one would naturally suppose would make the results inferior, have no special influence.

Meumann asked a number of the pupils in case of the individual tests whether they would prefer to take such exercises in the class or alone, whether they were disturbed by the noise of the other pupils. To his surprise 80% of the pupils gave the decided answer that they would prefer to do the work in the class. Some 15% gave no definite answer. The others, an extremely small minority, replied that they were disturbed in the class-room; and in most cases these were sensitive, nervous or weak children, although among them were some individuals of decided talent.

Meumann cites similar instances when external disturbances do not affect one, for example, in psychophysic experiments the striking of one or several metronomes in the case of most persons has no effect upon their work. Frequently we do better work when surrounded by noises in some such way; and experiments, as well as the experience of daily life, show that the total absence of noise frequently relaxes our energy for work. Meumann gives the case of his own experience in studying on Sunday in the totally empty university building at Leipzig, where there was a deathly stillness. At first he began to work with the expectation of doing a specially large amount,

but regularly found that this absolute stillness made him sleepy, and had a stupifying effect which decreased the amount of work done. Most external disturbances are not real disturbances of the progress of mental work. They are rather stimuli for increasing the energy of concentration. On the other hand, a decrease of the mental work is brought about only when the attention is turned from the work in hand and busies itself with these stimuli. Again we have a remarkable ability of adapting ourselves to distracting stimuli, and thus of gradually overcoming the strongest disturbances. Meumann found one subject who even under the strong influence of an electric current could observe just as well as before. With children this seems to be perhaps even more true than with adults. Apparently we need not worry overmuch about noise and other ordinary disturbances, but should aim to keep them from the habit of dawdling in study, distraction of attention, and confusion of association.

Again, as Meumann points out, a fundamental law of the will is involved in any activity of this kind. The better results of class work are probably largely due to the greater effort of the will (the *Antrieb* as Kraepelin calls it) put forth by the individual pupils, while in case of work at home or individual work there is likely to be less stimulus of this kind.

It is significant that when the pupils in the class were instructed to work very rapidly, *Recht rasch*, the results were less uniform, and in general not as good as when working under normal conditions. On the other hand, from Mayer's study it appears that when pupils working at home were urged by their parents to work rapidly the result was likely to be advantageous. In the former case there was already, by the presence of the class and the conditions of the work, sufficient stimulus to the will; the added stimulus of the exhortation to work very rapidly defeated its own end by over-stimulation. Whereas in case of the latter, the pupil lacking adequate stimulus to effort, the exhortation to hasten proved beneficial. The bad effects of overstimulation of the will is illustrated also in many of Dr. Triplett's subjects and has often been shown by experiments in the laboratory.

As Meumann points out, the general result of investigation is against home work; but there are some noteworthy exceptions. School work or the work of pupils in a group is on an average in all years of the People's school superior both in quantity and quality to home work and to work in solitude; but the general exceptions can be formulated as follows: home work is the more valuable the more the child's work takes on the character of an individual performance requiring the stamp of personality, and the more the higher mental faculties,—im-

agination, judgment, etc., are required; and the school work, on the other hand, is the more valuable the more the work bears the character of a mechanical, memoriter performance, and the less it demands the stamp of personality. Hence home work is specially valuable in the writing of compositions in the mother tongue, and perhaps in work in geometrical problems, and original drawings and modelings; on the other hand, the ordinary school practice of giving material to be learned by heart and written arithmetic for home tasks is contradicted. Such work is apt to result in untrustworthy and inaccurate memorizing which is injurious. The value of home work, according to Meumann's observations of the notebooks of the pupils, increases with the age, and not until the last two school years of the eight-year course attains a value which would make home work appear as an essential complement of the school work.

Actual practice as regards home study in this country and in Europe varies greatly. In 25 European cities Buchneder (1) found all degrees of home work from total freedom to an astounding amount. But home tasks were given in all these cities except Zürich.

In Zürich a school regulation forbids the giving of home tasks in the elementary schools, and recommends reducing the home tasks to a minimum in the higher grades. The regulation in respect to home tasks in the secondary schools reads as follows: "The home work must be thoroughly prepared for by the instruction. The repeated copying of the same task as a mere means of punishment is inappropriate. From the forenoon to the afternoon of the same day no tasks may be given. For Sundays and holidays, as well as the vacations, no more tasks are to be given than from one day to another. Where several teachers give instruction in the same class, there should be an understanding in regard to the number and extent, and a proper division, of the home tasks."(1)

The Prussian Hesse regulations for the higher schools are: for pupils 10-11 years old, 1 hour or 1½ hours; for those 12 to 13, 2 hours; for those 14 to 15, 2½ hours; for those 16 to 18, 3½ hours for daily tasks, with Sunday free. (7)

In Wurttemberg the statute of March 19, 1896, in regard to home tasks is as follows:

"1. The house-tasks, including the memoriter material, should be not more than 1 hour for pupils of the 1st to the 3d classes on full school days, and not more than 1½ hours on days when there is no school in the afternoon. 2. For pupils of the 4th class not more than 1½ hours, or two hours when there is no school. 3. For the other classes, in accordance with the programme of 1891, the time allotted for home tasks

should be limited on full days to 1½ hours to 2 hours, on afternoons when there is no school to 2⅓ to 3 hours." (4)

The regulations for the higher schools in Elsass-Lothringen may be taken perhaps as typical of the German states (12). They prescribe the following maximal norms:

For the pupils of	
Vorschule,	from 6 to 9 years, 30-40 minutes.
Sexta und Quinta,	from 9 to 11 years, 1 hour.
Quarta und Untertertia,	from 11 to 13 years, 2 hours.
Obertertia und Untersekunda,	from 13 to 15 years, 2½ hours.
Obersekunda, Unter-u. Oberprima,	from 15 to 18 years, 3 hours.

The official norms for home work vary, however, in different States. In Prussia for the instruction and home work together in the higher grades 8 hours is the maximum. In Hesse the home work for the middle classes is limited to 2½ hours, for the upper classes to 3. Württemberg considers the matter of afternoon instruction,—2½ to 3 hours of home work is prescribed for the free days, and 1½ to 2 hours for the days with afternoon instruction.

As a matter of fact, according to Dr. Jäger, occasion is frequently given for working more than this amount; but even regularly this amounts to a daily task of never less than 8 but for the most part 9 to 10 hours of mental work. This, he thinks, a conservative estimate for the 15-year-old boy. In criticism of this he argues that the normal day's work for the brain worker should never be more than the hours for one who does physical work, and when we consider that the pupils are in the period of growth and development this demand of 8 to 10 hours daily work indicates over-pressure and seriously threatens the health of the growing youth. Still further danger lies in the fact that the larger part of the work must be done in a sitting posture and in closed rooms. Still further, one cannot stop mental work at once as one does physical work, and the strain, the worry, and the repetition of associations, continue after the time of the actual tasks even into sleep, and the brain of the children—even of the most thick-skinned—is apt to be kept in a state of continued tension and excitement.

Dr. Jäger further points out that it is not those lacking in talent, not the lazy, the indifferent, and not the rogue, who are most seriously affected, but the most talented and the conscientious and ambitious pupils, who desire to fulfill all the demands of the school and who are ashamed to avail themselves of forbidden helps with which the other pupils know how to protect themselves. These are the ones who suffer most and are soonest injured.

In 1898–99 the Prussian Kultus-minister made an inquiry in regard to the home work of the pupils in the higher schools of

Berlin and the Province of Brandenburg (7). The basis of their results were the daily records and the reports of the pupils themselves. Out of 91 institutions 57 reported that the prescribed limit of time for home study was not surpassed; in case of the others, this occurred only in individual cases in *Tertia*; in *Untersekunda*, in 14 cases out of 88; in *Obersekunda*, in 6 out of 57; in *Prima*, in 21 out of 102. An older investigation made by Alexi found the actual amount of time spent in home work by the students of the Berlin *Gymnasien* to be in *Sexta* 10 hours; in *Quinta* 11; in *Quarta* 14½; in *Tertia* 18-22 hours; in *Secunda* 33 hours; and in *Prima* over 33 hours per week. This, too, without reckoning the hours in which the teachers gave the pupils extra assistance, which amounted to considerable in the lower and middle classes. These long days were not confined to the boys. Daiber reported diligent pupils in the upper classes of the girls' schools who worked 10 or 12 hours daily. In his famous address at the opening of the Berlin School Conference the German Emperor declared that when he was a student in the *Gymnasium* at Cassel, the pupils were obliged to report to the Director each morning the number of hours spent in preparing the task for the day. From thoroughly honest reports it appeared that the students in *Prima* spent from 5½ to 7 hours in home study.

Kemsies (6) has made a very careful study of the home work of his own pupils in an *Oberrealschule* in Berlin. The average amount of home work per pupil per day was 1 hour and 7 minutes, the average for Mondays, Tuesdays and Thursdays being somewhat more than this, the amount for the other three days amounting to less than an hour. Quite a different picture appears from the study of the work of individual pupils. Here enormous contrasts appear; one pupil, for example, reports for one day only 16 minutes, another, 1 hour and 52 minutes.

In this country we have no definite statistics in regard to the amount of home work done by pupils. Perhaps in most schools home tasks are allotted; but the amount of time actually spent by the pupils varies greatly from perhaps an average of 33 minutes in the grammar grades, as found by Mr. Lyford in a Worcester school, to 1 to 3 hours found probably often in high schools (5 and 16); and the individual differences are enormous, some pupils working not at all while others spend many hours in home study.

It should be noted that in this country a large part of the older pupils, especially the boys, do work outside the school. While we have little statistical data in regard to this, studies by Scudder and others indicate that the percentage of boys who have such work is large. Mr. Johnson (5), in his Study of the Habits of Work of High School Pupils in seven cities in

Indiana, found that of 600 pupils 512 had some employment other than school work; the boys delivering papers, working in stores, etc., the girls employed in household duties, etc. The seniors he found devoting more than two hours a day to employment other than school work.

Miss Trumbull (21), a teacher in the English High School in Worcester, found among 380 boys 172 who were thus employed, that is, a total of 45.26%. Of these 29 were only occasional workers, but the average time of work for the remaining 143 was 15 hours and 31 minutes per week for each pupil. The minimum time of employment was 20 minutes, and the maximum 48 hours per week.

Among the varied employments of these boys were the following: "work on farm, care of horses, driving team (grocery, laundry, etc.), baggage transfer, jobbing, choring, tending boiler, care of private grounds, janitor, work in markets and stores, in shops, factories and printing offices, running elevators, bill-posting, doing errands, delivery with automobile, work in laboratory assisting a teacher, employment in offices (doctor's, insurance, etc.), agent, reporter, extra work in a newspaper office (one pupil being thus employed from 6 p. m. to 1 a. m.), draughting, work in library, in the post office, ushering at theatre, and lastly, lighting lamps, delivering papers and peddling milk."[1]

In individual cases the work of these pupils was obviously a serious interference with their school work and decidedly injurious. Miss Trumbull gives the following illustrations: "No. 48 on list delivers papers from 5 to 7.30 A. M.; No. 127 does the same from 4 to 6 A. M.; No. 142 has a milk route of four hours before 8.30 A. M.; No. 148 has a paper route from 3.30 to 7 A. M.; No. 151 works four evenings a week from 7 to 12; and No. 102 works from 6 P. M. to 1 A. M. daily.

"I once rebuked a junior boy," she writes, "for being abstracted and absent-minded in his fourth-hour recitation. . . . . and he blazed out a remark . . . . the content of which was that he guessed if I got up at half-past two, and peddled papers till six, I would be stupid, too, when eleven o'clock came.

" . . . . But the worst display of temper I ever encountered on this subject was from a first year boy, whose work was absolutely worthless. He was rebuked in class for his poor work and inattention, when he returned this appalling answer that he rose at midnight and peddled milk till just time to get his breakfast and come to school, and if he could sleep in the afternoon he was going to, whether he knew anything about algebra

[1] p. 56.

or not. I had nothing to say. I should have felt that way myself."[1]

Educators seem to be pretty well agreed that the reason for home tasks is to give opportunity for self-activity and for memory drill in what has already been studied; and there is also a consensus that all tasks allotted for home work should be anticipated in the school.

The main point of the instructions in the Prussian decree of 1884 is that absolutely nothing should be given for home work which has not thoroughly been prepared for in school. The law is explicit almost to prolixity upon this point. "It is recognized," says the decree, "as an undoubted need in the process of instruction that, for example, in the linguistic instruction the mastery of the forms and of the vocabulary in learning a foreign language should be accomplished essentially in the hours of instruction, and the home work should be devoted merely to completing the accurate learning, and that a definite introduction should be given to the preparation for the reading in the foreign tongue where it first occurs; that the home tasks in the written translation into a foreign tongue should be thoroughly prepared for in oral exercises in reading; likewise, in the field of mathematics it is demanded that the tasks allotted for home work should be thoroughly prepared for by the hours of instruction and in no way should they go beyond the ability of the pupils thus developed. And in general it is to be demanded that the home work of the pupils should in no case be employed as a substitute for that which the hours of instruction can usually furnish, but as a continuation and supplement of the hours of instruction."

Schmidt found suggestions of individual differences in children in regard to home work, and further investigation he thinks might show that perhaps there are two types—some who naturally do their best work in the school, others who do their best at home—typical school workers, and typical home workers. Perhaps the number of home workers increases with the age of the pupils. Mr. Johnson enquired in regard to the high school pupils' preference for working at school or at home. Two-thirds of the pupils preferred to study at home rather than at school, and yet all the pupils came "from schools in which the discipline is excellent and all the school arrangements such as to make study at school pleasant and effective." Also the preference was decidedly in favor of studying alone rather than with others; 272 preferred to study alone, 59 with others. The proportion of those preferring to study alone increases with but one exception throughout the years of the

[1] pp. 57-58.

course, only 5 out of 53 seniors preferring to study in company with others, and nearly all who preferred to study at home preferred also to study alone; while about half of those who preferred to study at school preferred also to study with others.

The trend of opinion now is rather strongly against the giving of home tasks. The opinion of hygienists is that it leads to over-pressure, at least in many individual cases. The opinion of many school men also is that it leads to deception and slovenly work, and that only a minimum amount is necessary. Schanze's resolution at the Nuremberg Congress (13) expresses this view perhaps none too strongly. "The house-tasks, with the exception of those which relate to instruction in foreign languages, are to be looked upon from the point of view of instruction as unnecessary; from the educational point of view they do more harm than good. Their abolition, therefore, should be striven for." On the other hand, Schmidt's study, in which he carefully considers all the facts involved, corroborates the verdict of experience that often such home study is of great pedagogical value.

In the case of the poor, where home conditions make hygienic study impossible, or where so much work must be done by the pupils that there is no time for study, the allotment of home tasks should be altogether condemned. In case of the well-to-do, where the parents wish to share in the education of their children and where outside tasks like instruction in music, domestic duties, or the like, may be quite as important as the school work, the allotment of home tasks is likewise undesirable. The safe rule would seem to be that no home work should be prescribed; but where this seems desirable, suggestion for spontaneous work on the part of the pupil may well be given.

Conclusion.

From the results of experiment and from observation, the following inferences seem to be justified:

1. In many individual cases there is clearly danger to health from home work, but under favorable conditions home study is of great pedagogical value.

2. The general rule from the point of view of hygiene is that wherever possible home tasks should be limited to spontaneous work suggested by the teacher.

3. The special evils likely to be connected with home study are the tendency to deception, slovenly work, the formation of habits of carelessness, dawdling, error, and confusion.

4. There is a consensus both of educators and hygienists that whatever home tasks are allotted should be carefully pre-

pared for in the school. German experience has so fully established this point that it is incorporated in the Prussian law.

5. Home study can more advantageously be given in drill in language forms already learned, especially in the foreign languages, and in the writing of essays in the mother tongue and other original work. Home work in arithmetic and the like is of doubtful value, and often injurious to health.

There is evidence from experiment that the quality of home work in the grammar grades is usually inferior to that of school work. Experiment also indicates that some kinds of work are done better in the class, some are done better when pupils work alone in the home. The more the work requires the exercise of individual talent, the better can it be done alone; the more it is mechanical and does not demand original thinking, the more likely is it to be done better in the class.

6. Ordinary interruptions by parents and others, noise in the street and the like do not seem to be serious distractions to most pupils; but the quality of their work is more seriously affected by psychic distractions.

7. It is probable that there are great individual differences in ability to work in home surroundings. Perhaps, as Schmidt suggests, there are two distinct classes,—typical home workers and typical school workers.

8. In order to give home tasks safely and judicially, intimate knowledge of the pupils and their home surroundings is essential; and for studying these facts at first hand a method like that of Dr. Schmidt, for those who have time for it, seems to be specially commendable. It is valuable because it is a means of coming to close quarters with the facts.

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LITERATURE.

Autobiography of Andrew Dickson White. With Portraits. The Century Co., New York, 1905. Vol. I, pp. 601; Vol. II, pp. 606.

We have here volumes of unusual interest. After describing his boyhood, the second part is devoted to his political life, the third to his professorship, the fourth, his presidency of Cornell, the fifth, his diplomatic service including his duties at the Hague, the sixth, sundry journeys and experiences, the seventh, miscellaneous relations, the eighth, religious development. There are several chapters under each of these headings, and of themselves they recall the wide range of experiences included in these volumes. Save in the last part, on religious life, there is very little of the introspection or confessional that is such a marked trait in the Autobiography of Herbert Spencer. The political experience of the author in this country which was confined almost entirely to his own State is, of course, of far less interest or significance than that in the Autobiography of Senator Hoar. President White has certainly been a rolling stone, but he has contradicted the adage, for he has gathered here a wealth of not merely reminiscence, but experience that will make his book of permanent value in the culture history of this country. Perhaps many readers will deem certain of the numerous anecdotes and reminiscences slightly trivial or perhaps indicative of a somewhat Boswellian attitude toward the great men he has met.

President White evidently took himself very seriously from the start to the extent of keeping diaries, which are sometimes copious. Perhaps there are places in these volumes where we could wish that what appears to be the diary form had been reconstructed or even condensed. Again, the book is one of extraordinary candor. The author states very frankly his own views upon many delicate and controverted points. His outspokenness concerning the Czar, Emperor William, and other living and lately dead men with whom he has come in contact, are, to say the least, surprising. While we are personally grateful and acquiesce in his judgments in nearly all these matters we can but wonder whether personal courtesy or diplomatic usage should not cause the publication of some of these opinions to be deferred a decade or more.

President White was doubtless better equipped for the important and manifold functions he has performed in this country than any one else of his generation. His historical knowledge was that of the professor. His interests centered in modern rather than ancient problems, so that no historian could have brought all there was in him to bear so well upon the practical questions of legislation and diplomacy. President White had the inestimable advantage over nearly all our continental diplomats of knowing his French and German and thus giving his office the dignity it should have. On the whole this is the record of a life of which every American should be proud. Few others are so typically American in their power of adjustment to the varied problems and conditions with success. He has rendered very great service to this country educationally, diplomatically, morally and personally. His views on nearly every topic, save perhaps religion, will commend themselves to the best sentiments of this country. His per-

sonal acquaintance in Europe is perhaps wider than that of any other American has ever been. The author, however, has not displayed in his life the first-class qualities of a great leader. The excellent things he has done have been always the natural next steps that would have been done any way sooner or later. His temper nowhere shows that of a great hero, nor has he the mettle to stand forth to meet a storm of public disapproval alone for a cause he could live and die for. His is not the mind of a great originator. He knows too much from books, travel, and personal acquaintance to believe in his own power to create great reforms. His character was not formed in an environment of storm and stress, and his constitution was too tender and his nurture too favored by fortune to bring him into the closest relation to what Goethe calls the great moral powers. Yet even this is almost painful to say of a man who perhaps better than any other in his generation represents the American ideal of the gentleman and the scholar.

Child Music. A study of tunes made up by quite young children, with very striking examples and illustrative remarks, concluding with elaborate pieces founded entirely upon young children's tunes, by WILLIAM PLATT. Simpkin, Marshall & Co., London. pp. 37.

The author is a poet, musician, and is perhaps better known as an author of novels. His own children, reared in a musical atmosphere, in their dreamy moods crooned melodic snatches which were utterances of sheer emotion. The drawings of children are very whimsical oddities. His sayings come rather nearer expressing his true self, but the true evolution of the child's soul from within is found in song. When twenty-eight months old, the author's boy sang a very simple phrase to the words, "I saw the pussy in granny's window." At three a longer tune was unconsciously invented to the words, several times repeated, "Oh, the sun is on the bath and the birdies are building nests in the trees." Various others express a dreamy kind of wandering, more or less accented notes. The second boy, at seventeen months, uttered a distinctly musical call, imitated a trumpet and showed a distinct sense for key, with leanings toward plagal cadences. The second child is quite as musical as the first, but less prone to dreamy soliloquies. Some of these songs show tonality; others are in very marked cantabile style. Occasionally the words are gibberish. The real minor is rare. The spontaneous music of these children was easily more in tune than music that they had learned. The author believes that canon, instead of being a late refinement of musical art, is one of its earliest developments, and is led to this view by observations on his own children. By rolling sheets of paper like trumpets the children would improvise in unison, the elder leading and the other following so promptly and truly that it was difficult to tell which was the leader. So when the father invented tunes, the children followed with startling ease, as though all three were inventing the same thing at once. If the scale is not natural it is certainly imbibed very early, although when very young children are set to learn even simple little melodies, they lose tune at once. The author's view is that by centuries of culture and experience we have discovered a scale in harmony with natural law which is quickly assimilated. In the history of the race, the plagal cadence is earlier, and children redevelop it for themselves; but in the history of concerted music, canon is an early feature, and this children rediscover. The tunes of the more resolute younger boy more often ended on the key-note. Finally the author has taken these simple tunelets, intact and exactly as they were invented, as themes for rather elaborate compositions of his own, often adding, however, new verses, but adhering

closely to the thematic material of the children. One child persistently avoided strong accents.

The Place of Industry in Elementary Education, by KATHERINE E. DOPP. Third edition. Univ. Press, Chicago, 1905. pp. 270.

The author first reviews the significance of the industrial epochs—hunting, fishing, pastoral, agricultural, metals, travel, trade, transportation, the city, state, the feudal system, the handicraft and the factory. The next chapter is on the origin of attitudes that underlie industry; the fourth on practical applications in infancy and childhood.

A History of Science, by HENRY SMITH WILLIAMS. Harper & Bros., New York, 1904. In 5 volumes.

This is the most comprehensive and ambitious attempt to outline the history of science since Whewell. The first volume is devoted to science in antiquity; the second begins with the dark ages and ends with Linnæus; the third takes us to Helmholtz, Tait and Kelvin; the fourth goes back to phlogiston and traces the history of chemistry, anatomy, physiology, experimental psychology, oriental archæology, etc.; and the last volume is devoted to the British Museum, Royal Society, some physical laboratories, marine biology, medical laboratories, unsolved problems, etc.

Nature Study Lessons for Primary Grades, by MRS. L. B. MCMURRY. The Macmillan Co., 1905. pp. 191.

This volume is divided into two parts, the first treating animal life, with nineteen types—the shepherd dog, cat, horse, cow, sheep, fox and gray squirrel, mouse, rabbit, chick, robin, crow, owl, sparrow, caterpillar, cabbage butterfly, milkweed caterpillar. The second part treats ten plants—the nasturtium, morning glory, wild rose, blue violet, apple, etc. This book is of the chatter variety. "How many of you have seen a dog drive sheep? How did it drive them? Does a shepherd dog know much? How do you know? My father owned a dog named Prince. How could he tell which cattle were not our own? What color are dogs' eyes? Are they larger or smaller than yours; in the same part of the face or not; of the same shape? Do they hear well? Can you prick up your ears? How does he keep off the rain? How many ears has he? Why? Does he make a noise in running? Bring in a dog and point out his toe. How does he talk, etc.?" Should these not be called language lessons?

The Student's American History, by D. H. MONTGOMERY. Revised edition. Ginn & Co., Boston, 1905. pp. 612+lvii.

This follows the lines of the author's "Leading Facts in American History," but is fuller. It has many illustrations, maps, fac similes of handwriting, etc.

Die moderne Frauenbewegung, von KAETHE SCHIRMACHER. B. G. Teubner, Leipzig, 1905. pp. 130.

This little book traces the history of woman's emancipation in each Germanic, Romanic, Slavic and oriental land, beginning with thirty pages in the United States.

The Trend in Higher Education, by WILLIAM R. HARPER. University of Chicago Press, Chicago, 1905. pp. 390.

This book is made up of twenty-three papers, mostly addresses, some of which have been notable, such as The University and Democracy, Religious Education, Waste in Higher Education, Dependence of the West upon the East, The Contributions of Johns Hopkins, The

Urban University, The Business Side of the University, Theological Seminaries, Co-education, Alleged Luxury, Length of the College Course, etc.

The Classics and Modern Training, by SIDNEY G. ASHMORE. G. P. Putnam's Sons, New York, 1905. pp. 159.

These addresses are published in order to call attention to the value of the ancient languages and literatures to education. The author thinks that in these days the popular interest in antiquity is becoming more therapeutic than real. The addresses do not attempt to deal with details of technical scholarship, but are excellent works of what may be called appreciation. The author pleads for classics in our schools, particularly Latin, and then discusses, in the four chapters that follow, our classical inheritance, the tragedy and comedy of the Greeks, classical archæology, the Olympic games at Athens in 1896.

Citizenship and the Duties of a Citizen, by WALTER L. SHELDON. (Ethics for the Young, 4th series.) W. M. Welch Co., Chicago, 1904. pp. 466.

This is a treatise not on civil government, but on ethics, intended as lessons and not for continuous reading. Each chapter might be evolved into a dialogue. The writer seeks to link the idea of duty with that of citizenship, and throughout seeks to suggest what we ought or ought not to do as citizens. This the author would have us regard as a separate department. He avoids disputed questions, party, and doctrinal issues, adopts the conversational rather than the literary method, appends classical selections and memory gems, etc. On the whole the work suggests the French texts of citizenship. The topics involved are relations to home, family, city, money, the ballot, taxes, office holding, the flag, crime, disputes, etc.

Duties in the Home and the Family, by WALTER L. SHELDON. (Ethics for the Young, 3rd series.) W. M. Welch Co., Chicago, 1904. pp. 411.

This work is devoted to the home and the family. It treats of the relation of each member to the other, obedience, the table, sorrow, family, pride and honor, hospitality, festivals, eye service, quarrels, respect for parents, sickness, private room, and so on.

The New Knowledge. A popular account of the new physics and the new chemistry in their relation to the new theory of matter. By ROBERT KENNEDY DUNCAN. A. S. Barnes & Co., 1905. pp. 263.

This book we believe meets a real need in telling the latest things in physics and chemistry that intelligent people want to know. The author explains the periodic law, gaseous ions, radio-activity, resolution of the atom, inorganic evolution, new knowledge and old problems, all in an interesting and lucid way which shows a good command of the subject and excellent powers of exposition.

The White Peril of the Far East. An Interpretation of the Significance of the Russo-Japanese War. By SIDNEY L. GULICK. Fleming H. Revell Co., New York, 1905. pp. 191.

This is a striking and earnest book. The author is a staunch friend of Japan, a great believer in her power to maintain a prolonged war. He is trained by long residence in the East and his book is certainly one of the most timely and opportune. Those who have read his earlier works on the "Evolution of Japan" and the "Growth of the Kingdom of God," will appreciate this new interpretation of the significance of the present war in the East.

Economy in Education. A practical discussion of the present-day problems of educational administration. By RURIC N. ROARK. American Book Co., New York, 1905. pp. 252.

This work treats in convenient compass, attractive form, and with comprehensiveness, the rural, the city school, the college, the training school; and then, passing from individual schools to educational systems, treats of the organization and inter-relation of school units in the state and city, and the curriculum; then passes to the correlation of the school with the community, home, library, museum, art galleries, press, pulpit; and finally the projection of the school into the community, of playgrounds and vacation schools, extension, and so on.

Ready Money, by GEORGE H. KNOX. (Personal Help Library.) Personal Help Publishing Co., Des Moines, Iowa, 1905. pp. 317.

This author has a clear, concise style of putting things, but his book is somewhat nondescript. In the first part he treats of such themes as getting started, courage, books, business ways, why men fail, nerve, results, self-mastery, emergencies, initiative, brain, muscle, trifles, and so on; and the second part contains bits of eloquence that have pleased the writer from Demosthenes down to Henry W. Grady.

Trusts, Pools and Corporations. Edited with an introduction by William Z. Ripley. Ginn & Co., Boston, 1905. pp. 477.

This is a volume of special studies by different authors, treating respectively the Michigan Salt Association, the Whiskey Trust, the Adyston Pipe Company, the promotor's liability for unrevealed profits, the Asphalt Company, the Massachusetts Corporation Law, tin plate, the Sherman Anti-Trust Act, trade combinations at common law, the Steel Corporation, Mercantile Marine Company, etc.

The Right Life and How to Live It, by HENRY A. STIMSON. A. S. Barnes & Co., New York, 1905. pp. 256.

This work is dedicated "To the dear children in my own home," and has a brief, rather pragmatic introduction by Superintendent Maxwell, of New York. The topics discussed are self, the universe, nation, family, God, cause, progress, habit, character, duty, intellect, choice, feeling, obligation, the sin of suicide, the body, sex, the true self, work, the citizen, business, home, sport, animals, mediocrity. It is a good, fatherly book.

Professional Education in the United States. Teaching. By HENRY L. TAYLOR. Higher Education Bulletin 24. New York State Education Department, January, 1905, pp. 393.

This is a convenient kind of index of professional training in the United States. It gives a few lines each to the colleges, is fuller on the normal schools, and has an interesting chart illustrating the American system of education as exemplified in New York.

Paris and the Social Revolution, by ALVAN FRANCIS SANBORN, with drawings by Vaughn Trowbridge. Small, Maynard & Co., Boston, 1905. pp. 404.

This is a very careful study of the anarchists in Paris, what they want, their mode of propaganda, the revolutionary traditions of the Latin Quarter, the Socialists, Bohemians, those who starve, commit suicide, freaks, the revolutionary spirit in poetry, music, art, literature. There are many wood cuts, some of them full page.

Der Schuss von der Kanzel, von CONRAD FERDINAND MEYER. Edited by Martin H. Haertel. Ginn & Co., Boston, 1905. pp. 141.

The Story of Columbus and Magellan, by THOMAS BONAVENTURE LAWLER. Ginn & Co., Boston, 1905. pp. 151.

Autobiographical Sketches and Personal Recollections, by GEO. T. ANGELL. Published by "The American Humane Education Society," Boston. pp. 114+37+28.

Short Stories from American History, by ALBERT F. BLAISDELL and FRANCIS K. BALL. Ginn & Co., Boston, 1905. pp. 146.

A Practical Commercial Speller, by ELIZABETH F. ATWOOD. Ginn & Co., Boston, 1905. pp. 201.

Journal of Social Science, containing the Proceedings of the American Association. Edited by Frederick S. Root. No. XLII, September, 1904. Boston Book Co. pp. 192.

How the United States Became a Nation, by JOHN FISKE. Ginn & Co., Boston, 1904. pp. 254.

An Inside View of Trusts. Testimony of Members of the Standard Oil Company taken by the Industrial Commission, 1899. Appeal Printing Co., New York. pp. 392.

A Roman History in Latin Extracts. Edited by M. G. Derham. Part I, from the founding of Rome to the Punic Wars (753-264 B. C.), 1905, pp. 122.

BUDAPEST COMMITTEE OF CHILD STUDY.

The plan of the establishment of an Institution of Child Study in Hungary was made in the year 1901, when, upon the proposition of Mr. László Nagy, Director of the Preparatory Training School, a conference was held in Budapest. The institution, however, could only be definitely formed in March, 1903, under the denomination: "Committee of Child Study." The presidents are: Count Sándor Teleki, M. P., Dr. Sándor Náray-Szabó, Ministerial Councilor, and Dr. István Bárczy, Alderman of the Municipal Council of Budapest, acting Vice-President and Director, László Nagy.

The institution is sustained by the public in general and especially by physicians and pedagogues.

It was our Committee which instituted the Public Conferences on Child Study where popular lectures are held on special questions of Child-Psychology, the audience being permitted to ask questions or else to address the meeting. Such lectures were held by Director László Nagy on "The Method and Object of Child Study," Paul Ranschburg, M. D., on "The Determination of the Mental Faculties of Children," Professor Zsigmond Várady, on "The Development of the Speech of Children," Director Mihály Láng on "The Instinctive Handiwork of Children," Professor Antal Streitmann on "The Drawings of Children," Gyula Grosz, M. D., "The Physical Development of Children," Professor Dr. Béla Lázár, on "The Fancy of Children," Károly Décsy, M. D., on "The Effect of Diseases upon the Mental State of Children," etc.

In the year 1904 the Committee organized a Course of Child Study for teachers under the lead of Pául Ranschburg, M. D., an eminent Child Psychologist. The Course consisted of a theoretical part of two months, which was frequented by twelve teachers of Budapest. In this course the students learned all the exact methods of investigations of Child Study. This was followed by a practical course of two weeks during which the students made practical investigations, partly

of healthy and partly of imbecile children, and also assisted in the clinical treatments of Dr. Ranschburg. The cost of the course was partly supported by the Municipality of Budapest. The teachers who attended the courses are at present members of the School Section of the Committee, of which Dr. Ranschburg is the President and Géza Jablonkay the Secretary. The members of this special section make their investigations according to an established plan, while the results of the investigations are reported in common. At present they are occupied with the investigation of the Child's faculty respecting numbers and the Child's stock of notion and words.

Our committee will in the autumn next year arrange an exhibition of Child Art embracing nine groups. The objects of that Exhibition will be partly scientifical, partly pedagogical. It is intended to show the child's soul by means of the collection and exhibition of data concerning the artistic expressive movements, the plays, handiwork, dances and songs of children, consequently the concrete and permanent phenomena of the child's soul, which just for this reason are easily accessible and easily to be studied.

By the exhibition of children's art, attracting therewith the attention of pedagogues, physicians, and of the public in general, to the vital functions of children and by creating an interest for Child Study, we intend rendering a service to the cause of the education of children. In order to make this object of the Exhibition evident and also to secure its effect, we have in view to exhibit the single groups of the science of education and of pedagogy, namely, the groups of drawings, of pictures, of the class-room, of patterns, of playthings, etc.

We intend, by contrasting and comparing with the instinctive emanations of the child's soul, the pedagogical processes and means, to make the mutual relation of these two, namely, their agreement or discrepancy apparent, from which may result very important information for the future. And in taking the children's instinctive as well as conscious drawings and handiwork for an object of the Exhibition, we intend to suggest the great importance of artistic and technical education as the means of forming the apex of our whole system of instruction and education.

Another important idea of the Exhibition consists in our trying to draw on the whole line a parallel between the inner life and the didactics of normal and abnormal children. For this reason we admit to each group the point of view of the natural symptoms and of the means of instruction of abnormal children. By this juxtaposition we intend likewise to open up new paths of Child Study.

It is likewise a very important plan of the exhibition that together with the ontogenetical point of view it is meant to permit illustration also of the phylogenetical points of view. In this way the Exhibition will furnish an illustration both of the emanations of the child's soul and of the naïve drawings, handiwork, songs and playthings of the Hungarian people as also of tribes of a primitive state of culture.

The Committee of Child Study intends to issue towards the end of this year a Periodical of Child Psychology.

Communications to be addressed to Mr. László Nagy, Director and Acting Vice-President of the Committee of Child Study, VIII, 16/b Ullöi-út, Budapest, Hungary.

NOTES.

It was the privilege of the writer, through the courtesy of the school board of a large city, to attend one of its meetings. The board consisted of five members, each receiving a salary of $1,200 and being

elected by the people for a term of four years. Meetings are held weekly and are open to all who desire to attend, although most important questions are settled before in an informal meeting of a committee of the whole. There were in this meeting, I think, some $38,000 appropriated. Although the public could be admitted, no outsider was present save two reporters to whom the salaried clerk gave all the information they desired. The meeting lasted perhaps half an hour. It was a revelation to me. There were no wrangles or disagreements, no talking to the public, but the business principles of an office of a great corporation were observed. Each member has specific duties. When the change was made from an old-fashioned, large, lumbering board, there was immediately a very marked reduction of expenses, great improvement in the personnel of the teachers, better schoolhouses, some of them the best, for the money, I have ever visited, and a new educational spirit pervaded all. I had visited the schools of this city, which expends over half a million dollars a year, receiving twenty-five dollars per regular pupil from the city and an average of from two and a half to three dollars from the state, and there was a very marked improvement in every respect. In fact, the first year of the new regime $81,000 were turned back into the coffers of the state and city. This system secures the services of the best men, and to see how everything was done was a revelation. G. S. H.

An Automatic Kindergarten. The first grade of the Riverside School, Tewksbury, opened last fall with 56 pupils, children of the mill operative class, rather undeveloped, some not speaking English, many barely five years of age, "babies" who fell asleep in their seats. There was one teacher and the school day was five hours long.

A large, well-lighted, well ventilated room, unoccupied, was converted into a play room. Two corners of the room were boarded off for sand piles, a load of sand in each. Between the sand piles was placed a large doll house, now being furnished by the older children of the building with wall paper of original design, rugs, curtains, toy furniture of wood, such as tables, chairs, desks, upholstered couches, easy chairs, piano, book shelves, sofa cushions, pictures, etc.

For toys there were supplied carts, reins, wheelbarrow, shovels, go-cart, doll carriage, dolls, doll hammock, toy tables, stove, kitchen utensils, brooms, tea sets, small chairs, balls, bushels of blocks, picture books, sliced pictures, drum, Hiawatha suit, wigwam, a swing made of a single pole, with cross piece at the bottom, a climbing ladder from which descended a smooth waxed board for a slide, and some other things.

The children are turned into this room in divisions of about fifteen children at a time, both morning and afternoon, without any attendant, returning to their work at the summons of the teacher to give place to the next division. The children play very happily and, strange it may seem to some, without quarreling and without disturbing the other rooms. They apparently are not fatigued by the school day, and have done as much (the teacher, Miss Barnes, affirms twice as much) regular work as previous classes. The children are particularly skillful in manual occupations, the non-English children have gained very noticeably in command of the English language, read ordinarily well, sing particularly well, and the attendance has been better than in previous years.

The town has expended, perhaps $30 on the room, an expenditure which will not need to be incurred again for several years, some toys were donated, and the teachers raised about $15 by a candy sale. The town has practically saved the salary of an assistant teacher for at least a part of the year. G. E. JOHNSON.